WELCOME TO BUCKEYE FIRE EQUIPMENT

ONLINE DOCUMENTATION

SERVICE MANUAL

FOR
ALL SIZES OF

PORTABLE DRY CHEMICAL EXTINGUISHERS
133401

PORTABLE HALON 1211 EXTINGUISHERS
133501

PORTABLE CARBON DIOXIDE EXTINGUISHERS
133601

PORTABLE HALOTRON EXTINGUISHERS
133901

WET CHEMICAL EXTINGUISHERS
133301

PORTABLE WATER EXTINGUISHERS
133701

110 KINGS ROAD
KINGS MOUNTAIN, NC 28086
PHONE: 704.739.7415 FAX: 704.739.7418

FORM 1339-1198-0405

BUCKEYE FIRE EQUIPMENT COMPANY
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TABLE OF CONTENTS

		PAGE
SECTION I	GENERAL INSTRUCTIONS *Installation Procedures, Mounting Instructions, Operation Instructions, Warnings, Safety Requirements & Inspection Procedures*	2 - 6
SECTION II	HYDROSTATIC TESTING	7
SECTION III	DRY CHEMICAL EXTINGUISHERS – 133401 *Maintenance Procedures & Service/Recharge Procedures*	8 – 15
SECTION IV	HALON 1211 EXTINGUISHERS – 133501 *Maintenance Procedures & Service/Recharge Procedures*	16 - 22
SECTION V	HALOTRON I EXTINGUISHERS – 133901 *Maintenance Procedures & Service/Recharge Procedures*	23 - 31
SECTION VI	CARBON DIOXIDE EXTINGUISHERS – 133601 *Maintenance Procedures & Service/Recharge Procedures*	32 - 38
SECTION VII	WET CHEMICAL EXTINGUISHERS – 133301 *Maintenance Procedures & Service/Recharge Procedures*	39 - 42
SECTION VIII	PORTABLE WATER EXTINGUISHERS – 133701 *Maintenance Procedures & Service/Recharge Procedures*	43 - 46
SECTION IX	SUPPORT MATERIALS *Extinguisher Drawings* *Service Illustrations & Diagrams*	47 - 56

SCOPE

This manual is intended to provide general operation, installation, inspection, maintenance, recharge, and service instructions for current Buckeye Fire Equipment Extinguisher Models. The designed use of this manual is limited to those experienced, trained, and qualified professional fire extinguisher service personnel familiar with normal industry safety practices and precautions.

By publication of this manual, Buckeye assumes no liability for any damages or injuries which may inadvertently occur.

The extinguisher should be installed, inspected, and maintained in accordance with (NFPA-10) National Fire Protection Association standard for portable extinguishers and the requirements of the local authority having jurisdiction.

SERVICING PARTS REQUIREMENT

Replacement parts used in servicing Buckeye Extinguishers must be authentic Buckeye parts. Always refer to the latest Buckeye Fire Equipment Parts Manual for proper part numbers. The model number found on the label is the only correct reference in the parts manual.

SAFETY TIPS

Never have your head or any part of your body over a cylinder while removing the valve assembly.

Use a gauge shield when pressurizing units. Never look at a gauge square if a shield is not used.

Use safety glasses and safety shoes when working with heavy and pressurized equipment.

To avoid personal injury or equipment damage, observe all “warnings and safety points” contained in this manual.

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SECTION I – GENERAL INFORMATION

GENERAL INSTRUCTIONS

This service manual is designed to provide service and maintenance instructions for all current Buckeye Fire Equipment extinguishers and is for use by experienced and qualified people.

This section covers general instructions which are applicable for all types of fire extinguishers manufactured by Buckeye Fire Equipment.

REFERENCES

NFPA-10: The National Fire Protection Association Standard for portable fire extinguishers is considered part of this manual. It applies to selection, installation, maintenance, and testing of portable fire extinguishing equipment. The NFPA-10 Standard may be obtained from:

NATIONAL FIRE PROTECTION ASSOCIATION
Batterymarch Park
Quincy, MA 02269

CGA: The Compressed Gas Association pamphlets C-1 and C-6 are considered part of this manual. These cover Hydrostatic Testing, proper cylinder disposal, visual inspection, and handling of compressed gas cylinders. The above pamphlets may be obtained from:

COMPRESSED GAS ASSOCIATION
1235 Jefferson Davis Highway – Suite 501
Arlington, VA 22202

U.S. GOVERNMENT PUBLICATIONS: Code of Federal Regulations, Title 49 is considered part of this manual. It may be obtained from:

U.S. GOVERNMENT PRINTING OFFICE
Washington, D.C. 20402

Instructions in this manual are to be followed for all types of servicing of Buckeye Fire Extinguishers including a one-year and six-year tear-down legislative requirements.

INSTALLATION INSTRUCTIONS

1. Check the unit for any shipping damage.
2. Remove all strapping, tape, and packaging from new units.
3. Perform the inspection procedures outlined within this manual for the specified model.
4. Select the proper unit placement location in accordance with NFPA-10 distribution recommendations. Ensure that the unit is protected, accessible, and near potential fire hazards.
5. Ensure ambient temperatures in area of extinguisher placement do not exceed limitations specified on extinguisher's nameplate.
6. Always utilize the proper Buckeye Fire Equipment wall hanger or vehicle bracket specified for the extinguisher model. Select the proper fastening hardware suitable for the mounting surface.

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MOUNTING INSTRUCTIONS

Your extinguisher should be mounted in a clean, dry area, accessible to the fire hazards and preferably near an exit. Hang it so that the top is from 3 ½ to 5 feet above the floor and out of reach of small children. Use the mounting bracket furnished with the extinguisher. Fasten to a solid surface using strong screws or fasteners (not included). Follow the MOUNTING INSTRUCTIONS below.

UL specifies that the hanging device must withstand a vertical force of five times the weight of the charged extinguisher but not less than 100 pounds. The extinguisher bracket should be mounted as follows:

Walls where 2 x 4 studs can be found: Mount wall hanger bracket securely to stud using a No. 12 x 1 ¼ inch long wood screw through the hole in the bracket.
Sheet Rock: Mount a ¾ inch thick board to wall using 3/16 inch toggle bolts. Board should extend a minimum of two inches beyond all sides of the extinguisher profile (excluding hose and wand). Mount hanger bracket to board using a No. 12 x 1 inch long wood screw as above.
Cinder Block or Cement: Mount wall hanger bracket using one ¼ inch toggle bolt or masonry lead screw expansion anchor through center hole in wall bracket.
Concrete or Tile Walls: Mount wall hanger bracket using one ¼ inch masonry lead screw expansion anchor through center hole in wall bracket. *For Tile Walls:* Locate in joint.
Steel Posts or Beams: Special tools and fasteners are required. Have extinguisher mounted by a professional fire extinguisher service company.

OPERATING INSTRUCTIONS

CAUTION:

Persons expected to use this extinguisher should be trained in initiating its operation and in proper fire fighting technique. "Hands On" training will familiarize personnel with the feel for this extinguisher so that the most effective application will be used in an emergency situation. The basic operating instructions are contained in the pictogram on every nameplate (label).

WARNING AND SAFETY REQUIREMENTS

Warning/Safety Point: ***To avoid personal injury or equipment damage, prior to performing any servicing or recharge, always ensure all pressure has been completely relieved from the extinguisher by securing/directing nozzle into a proper discharge collection area and depressing the operating lever for a few seconds. Never rely solely upon the gauge face reading.***

Warning/Safety Point: ***To avoid personal injury or equipment damage, never mix different types of dry chemical agents as they may react to produce undesirable internal pressures or other detrimental conditions.***

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OPERATION INSTRUCTIONS (cont.)

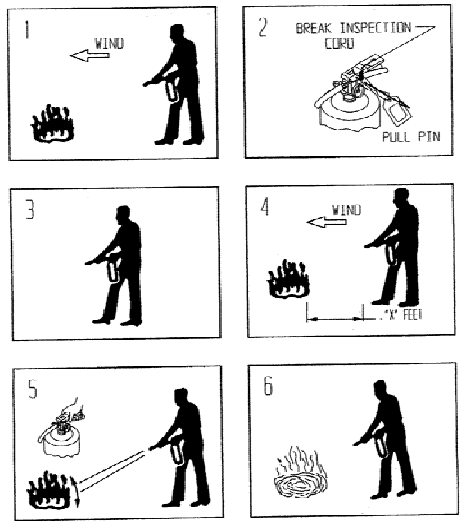
Warning/Safety Point: ***To avoid personal injury or equipment damage, never connect an extinguisher directly to a Nitrogen or Argon pressurization source. Always utilize an adjustable and calibrated regulator set to only 25 P.S.I. over the intended extinguishers charging pressure. Ensure that the proper hoses, adapters and connections are used and that the operator avoids standing directly in front of the extinguisher gauge during pressurizatrion.***

Warning/Safety Point: ***To avoid personal injury and prevent equipment damage, never allow extinguishers to remain connected to a pressurization source as any equipment defect could result in excess cylinder pressure and rupture.***

These instructions are general in nature and pertain to the operation of the extinguisher. The operator should always understand and be familiar with the specific instructions printed on the individual extinguisher nameplate prior to any potential fire situation.

Warning/Safety Point: ***To avoid personal injury or death, operators should always avoid positioning themselves in fuel areas and downwind of smoke and decomposition products. Splashing or scattering of fuel can be avoided by utilizing the proper fire fighting distances and sweeping technique. Remove the heat source from cooking appliances and activate the suppression system prior to discharging the extinguisher.***

1. Remove extinguisher from hanger/bracket and transport to a safe upwind position of fire.
2. Pull and remove pull pin, breaking inspection seal.
3. If equipped with a hose, remove it from retainer and secure nozzle in hand. (On 30 lb. Wheel unit only, depress cylinder valve operating lever, then flip up and secure “hold down clip”).
4. Approach fire from upwind position to distance recommended on nameplate and aim nozzle at base of flames.
5. Squeeze operating lever to the full discharge position and and with brisk sweeping motion, direct agent across full front edge of flame base until extinguishment is complete.
6. When fire is out, release operating lever and stand by being alert for any possible flashbacks.
7. Evacuate and ventilate the area immediately after extinguishing the fire. The fumes and smoke from any fire may be hazardous and can be deadly.



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NOTE: When using Wet Chemical Extinguishers discharge entire contents of extinguisher on the fryer surface as this aids in cooling and retards flashbacks.

OPERATING INSTRUCTIONS (Cont.)

After a fire, ensure that the proper personnel are notified to initiate corrective action and perform immediate clean-up/disposal of materials once fire area is deemed safe. Should you have any questions or desire actual fire training using extinguishers, contact your local distributor or Buckeye Fire Equipment for assistance.

NOTE: *Always ensure that the fire extinguisher is properly recharged immediately after any use!*

BASIC OPERATING INSTRUCTIONS

To operate hand portable extinguishers:

1. Hold upright.
2. Pull pull pin.
3. Start back 10 feet, aim hose or nozzle at base of flame.
4. Squeeze the lever, sweep side to side.

It is very important to note that one should never turn their back on a fire.

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SECTION I – GENERAL INSTRUCTIONS (Cont.)

INSPECTION PROCEDURES

Inspections should be performed in accordance with NFPA-10 and local governing authorities having jurisdiction.

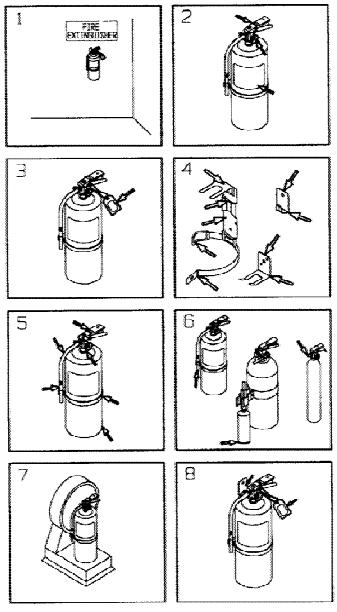
DEFINITION: *Inspection* is the "Quick Check" (per NFPA-10 4-3.2) of an extinguisher to ensure it is available and ready to use in the event of a fire. It is intended to give reasonable assurance that the extinguisher is charged and operable.

FREQUENCY: Extinguishers shall be inspected when initially placed into service and thereafter at approximately 30 day intervals. When circumstances require, more frequent intervals may be necessary.

NOTE: If inspection of an extinguisher reveals a discrepancy, the extinguisher should be subjected to the applicable maintenance procedure.

GENERAL INSPECTION PROCEDURES:

1. Ensure extinguisher is in its designated place with no obstructions to block its visibility or access. Immediately correct any discrepancy.
2. Ensure operation instructions are legible, tamper seal is intact, and if equipped, gauge is within operable range.
3. If equipped, observe the pressure gauge to ensure it is not damaged and that the yellow pointer is within the green operable range.
4. Remove extinguisher and examine wall hanger and / or vehicle bracket for any corrosion or damage and ensure that it is properly and securely mounted.
5. Observe overall unit for any physical damage, corrosion or leakage.
6. Ensure hose and nozzle are not damaged, plugged or obstructed.
7. Determine the extinguisher fullness by weighing and hefting unit.
8. Date and initial the inspection tag attached to unit per NFPA-10 recommendations, then return and secure unit in its designated place.



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SECTION II – HYDROSTATIC REQUIREMENTS

HYDROSTATIC TESTING REQUIREMENTS

Portable fire extinguisher cylinders and certain hose assemblies are subject to various periodic integrity and hydrostatic (proof pressure) testing requirements. Buckeye Fire Equipment extinguishers indicating evidence of corrosion or mechanical damage compromise the integrity of the pressure vessel and should immediately be removed from service. They shall be subjected to the appropriate test procedures or properly disposed of and replaced. Damaged or questionable hose assemblies should be replaced.

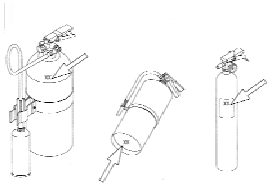
Buckeye Fire Equipment requires the removal of the operating valve from the cylinder for cylinder testing and the removal of all attachments from hose assemblies that require testing. Only qualified individuals recognized and authorized by D.O.T. may retest Buckeye Fire Equipment Carbon Dioxide compressed gas cylinders in accordance with D.O.T. and C.G.A. Requirements/procedures. NFPA-10 provides guidance for testing of non-compressed gas hand portable extinguisher cylinders and hose assemblies.

Warning/Safety Point: ***To avoid injury or death, always use a safety cage and never use compressed air or Nitrogen for pressure testing. The use of compressible mediums could cause a violent rupture should the vessel fail.***

Warning/Safety Point: ***To avoid injury or death, always ensure all pressure is completely relieved prior to attempting to remove or disassemble the operating valve or hose assembly.***

The diagram listed below identifies the various cylinder date stamp locations and periodic retest intervals/pressures.

BUCKEYE DATE OF MANUFACTURE LOCATIONS



TEST INERVALS AND PRESSURES

Various Model Sizes/Types	Construction/Material	Periodic Interval	Re-Test Pressure
5,10,15 & 20 lb. Carbon Dioxide	DOT-3AL-1800: Aluminum	5 Years	5/3 Service Pressure
1,2,2.5 & 4 lb. Dry Chemical	UL/ANSI-299: Aluminum	12 Years	300 PSI
2.5 lb. Dry Chemical	UL/ANSI-299: Steel	12 Years	300 PSI
5,5.5,8,10,20 & 30 lb. Dry Chemical	UL/ANSI-299: Steel	12 Years	585 PSI
1,2.2 & 2.5 lb. Halon	UL/ANSI-2129: Aluminum	12 Years	300 PSI
5 lb. Halon	UL/ANSI-2129: Steel	12 Years	300 PSI
9,13,17 & 20 lb. Halon	UL/ANSI-2129: Steel	12 Years	585 PSI
2.5 & 3lb. Halotron I	UL/ANSI-2129: Aluminum	12 Years	300 PSI
2.5,3,5,6 & 11 lb. Halotron I	UL/ANSI-2129: Steel	12 Years	300 PSI
14 & 15, lb. Halotron I	UL/ANSI-2129: Steel	12 Years	375 PSI
18, 20 & 24, lb. Halotron I	UL/ANSI-2129: Steel	12 Years	450 PSI
6 L Wet Chemical 2.5 Gal. Water Mist	UL/ANSI-8: Stainless Steel	5 Years	300 PSI
2.5 Gal. Water	UL/ANSI-626: Stainless Steel	5 Years	300 PSI
30 lb. Wheeled Dry Chem. Hose Assy.	UL/ANSI-92: Rubber	12 Years	300 PSI

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SECTION III – DRY CHEMICAL EXTINGUISHERS – 133401

MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of the extinguisher and is intended to provide maximum assurance that it will operate effectively and safely if needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye service/recharge procedures.

FREQUENCY: Maintenance of extinguishers shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTES: *Per NFPA-10, extinguishers out of service for maintenance shall be replaced by spare extinguishers of the same type and at least equal rating.*

Trained personnel using the proper tools, lubricants, and manufacturer's recommended replacement parts should perform maintenance. These personnel should be able to properly identify any indications of extinguisher damage or defect and safely correct such conditions per the applicable service/recharge instructions.

1. Ensure that the extinguisher is in its designated place with no obstructions to block its visibility or access. Immediately correct any discrepancies.

2. Ensure that the operating nameplate instructions are legible and face outward. Examine the inspection/service tag to determine if a 6-year teardown is due. (Per NFPA-10; Buckeye Fire Equipment Dry Chemical Extinguishers are subject to a 6-year service/recharge procedures as specified in this manual).

3. Check the date of manufacture listed on the nameplate or stamped into the cylinder to determine if periodic hydrostatic testing if required. Refer to the hydrostatic testing requirements listed on page 7.

4. Check the extinguisher gauge and verify it is within the proper operating range, undamaged, and of the proper type.

5. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other conditions that might impair extinguisher function.

6. Examine the nozzle and/or hose assembly for any obstructions, abrasions, cuts, cracks, or thread damage.

7. Examine the top portion of the valve assembly and verify that the valve stem is not corroded or damaged.

8. Ensure handle and operating lever are not damaged and that the rivets are secure.

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9. Examine the hose retainer band (if so equipped) and verify it is secure and properly retains the hose.

10. Weigh the extinguisher and verify that the correct total charged weight is as noted on the extinguisher nameplate.

11. Wipe all dirt or foreign deposits from the extinguisher with a damp rag.

12. Properly tag the extinguisher per NFPA-10 recommendations and fill out the necessary records.

13. Thoroughly examine the extinguisher wall hanger or vehicle bracket and verify it is not damaged or worn and that it is securely mounted.

14. Return and secure the extinguisher to its designated location.

WHEELED 30 LB. UNITS – ADDITIONAL MAINTENANCE PROCEDURES

1. While directing the hose nozzle in a safe direction, squeeze the nozzle lever to ensure that there is no pressure in the hose assembly. Remove the hose assembly from the extinguisher valve body.

2. Extend the hose assembly and thoroughly examine the hose and couplings for any obstructions, cuts, cracks, abrasions, or thread damage.

3. Open the hose valve while blowing dry air through the hose assembly to verify its operation and that the hose is clear of obstructions.

4. Remove the extinguisher from the cart by disconnecting the mounting bolts and examine the cart for any damage, broken welds, or corrosion. Verify that the wheels rotate freely and are secured to the axle.

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SECTION III – DRY CHEMICAL EXTINGUISHERS – 133401 (Cont.)

SERVICE/RECHARGE PROCEDURES

SERVICE PARTS - Replacement parts used in servicing Buckeye Fire Equipment extinguishers must be authentic Buckeye supplied parts. Refer to the latest Buckeye Fire Equipment Parts List and the model number located on the extinguisher nameplate to ensure correct part number references.

RECHARGE AGENT - Recharge the extinguishers with the agent specified on the extinguisher nameplate. Buckeye Fire Equipment extinguishers were tested and listed with this specified agent. Use of any other agent is unacceptable.

PRESSURIZING GAS - Only standard industrial grade Nitrogen with a dew point of -60°F (-51.1°C) or lower shall be used to pressurize Buckeye Fire Equipment Stored Pressure Dry Chemical Extinguishers. Dry air is not recommended as it may cause caking of chemical agents.

6-YEAR TEARDOWN - Per NFPA-10, Buckeye Fire Equipment Stored Pressure Dry Chemical Extinguishers shall be emptied and subjected to these service/recharge procedures every 6 (six) years.

DRY CHEMICAL PRESSURIZING – USE DRY NITROGEN GAS ONLY

Degrees F *(Temperatures above 120 degree F are not permitted*		Charging Pressure, PSI *Shaded area is nominal gauge pressure at 70 degrees F*	
120	111	215	264
110	109	211	259
100	107	207	254
90	104	203	250
80	102	199	245
70	**100**	**195**	**240**
60	96	191	235
50	96	187	230
40	94	183	226
0	85	167	206

For lower temperatures, reduce by following amounts for each 10° F.

3 4 5

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SECTION III – DRY CHEMICAL EXTINGUISHERS – 133401 (Cont.)

SERVICE/RECHARGE PROCEDURES

1. Remove the pull pin, invert the unit, and depress the operating lever to ensure all pressure is relieved.

2. Remove the hose/nozzle assembly from the valve with counterclockwise rotations. Verify that the nozzle orifice (see parts manual for orifice size) is correct for the specific model and thoroughly examine it for any internal blockage, damage, or wear.

   NOTE: If at any time worn or damaged thread surfaces are observed, Buckeye recommends that the part be replaced.

3. Ensure that the nameplate is legible and faces outward.

4. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other physical conditions that might impair extinguisher function.

5. Check the date of manufacture listed on nameplate or stamped into cylinder to determine if periodic hydrostatic testing is necessary. Refer to the hydrostatic testing requirements on Page 7.

6. Remove the valve assembly from the cylinder by rotating counterclockwise.

   NOTES: Valve body removal and installation only requires the use of firm hand pressure. Avoid the use of mallets as they may damage thread surfaces, handles, gauge, etc.

   Ensure that the original valve body and cylinder are kept together during service and recharge. These threads are not indexed and improper nameplate orientation may result with intermixing of components.

7. Remove the siphon tube and retainer nut from the valve body by rotating counterclockwise. Examine and replace if any damage or thread wear is evident.

8. Remove the Neck o-ring from the valve and examine it closely. Replace it if any cuts, cracking, or deformation is observed. Lightly lubricate the Neck o-ring.

   NOTE: Buckeye advises against the use of any Petroleum Solvents for cleaning and recommends use of Parker "0" lube for lubrication of o-rings and specified thread surfaces.

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SECTION III – DRY CHEMICAL EXTINGUISHERS – 133401 (Cont.)

SERVICE/RECHARGE PROCEDURES (Cont.)

9. Remove the valve stem and spring. Thoroughly examine and clean the stem, o-ring, and spring with a dry cloth. Replace if any deformation, corrosion, cracks, or damage is observed. Lightly lubricate the valve stem shaft o-ring. ***Do not lubricate the stem seat.***

10. Examine and clean the valve body internal sealing surfaces, internal threads, and external threads with a stiff-bristled non-metallic brush. Replace the valve if any thread damage, wear, internal scratches, or other structural damage is observed. Nicks, scratches, and residual contaminants left on valve sealing surfaces can result in loss of pressure.

11. Ensure that the pressure gauge specifies "For Dry Chemical Use Only", matches the nameplate's recommended operating pressure, and is not physically damaged. If gauge replacement is necessary, refer to the procedure on page 56.

12. Examine the handle, operating lever, and rivets to ensure that they are secure. Replace as necessary.

    NOTE: Examine the operating (top) lever, the handle, and the rivets to ensure they are secure and undamaged. Replace if you find any deformation, loose rivets, bends, or other damage. Following the installation of a new valve stem, check (by lifting the operating lever) to be certain that the valve stem protrudes from the valve body approximately ¼ inch. Depress the operating lever to verify that the lever depresses the valve stem. If not, remove the unit from service. Worn parts or wrong parts can decrease the effectiveness of a fire extinguisher.

13. Reassemble the valve and siphon tube in the following order:

    a) Lightly lubricate the o-rings and external threaded surfaces.

    b) Push the valve stem into the valve body with your finger until it is seated. Verify that the top portion of the stem extends beyond the valve body at least ¼ inch.

    c) Place the end of spring onto and over the stem post. Buckeye Fire Equipment extinguishers have either straight or tapered springs. If a tapered spring is used, you must use valve stem P/N 103214. If valve stem P/N 103214 is not available, change to a straight spring. If a straight spring is used, you can either use valve stem P/N 103214 or P/N103215.

    d) Press and screw the threaded siphon tube and adapter nut assembly over the spring and into the valve body with firm clockwise rotations until secure.

    e) Press the operating lever to verify proper movement.

    f) Pull on the siphon tube to ensure it is secure.

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g) Place a light dab of lubrication on top of the valve stem.

SECTION III – DRY CHEMICAL EXTINGUISHERS – 133401 (Cont.)

SERVICE/RECHARGE PROCEDURES (Cont.)

14. Empty all of the extinguishing agent from the extinguisher shell and thoroughly examine the internal and external cylinder condition.

    NOTE: *If the agent is to be reused, Buckeye recommends the use of a closed recovery system. Prior to agent reuse, it should be examined to ensure it is the proper type and that no contamination or caking is present.*

    Warning/Safety Point: ***To avoid personal injury or equipment damage, never mix different types of Dry Chemical agents as they may react to produce undesirable internal pressures or other detrimental conditions.***

15. Fill the extinguisher to its rated capacity with the Buckeye Dry Chemical specified on the extinguisher nameplate.

16. While carefully centering the siphon tube down into the agent, screw the valve assembly into the shell with clockwise rotations.

17. Install a Buckeye Recharge Adapter (P/N 600001) into the valve assembly. Refer to the diagram on Page 15 for a typical charging set-up.

18. Connect a regulated nitrogen source, pre-set to 25 P.S.I. over intended charging pressure stated on the extinguisher nameplate, and pressurize the unit by opening the pressure valve and depressing the extinguisher operating lever. Refer to the calibrated charging pressure gauge to determine the charge pressure. Do not rely on the extinguisher gauge for charging pressure. Close the pressurization valve and release the extinguisher operating lever once the proper charge pressure has been reached. Bleed off the charging line pressure by opening the bleed valve.

19. Insert the extinguisher pull pin into the operating lever, disconnect the pressurization source, and remove the recharge adapter.

20. Install the tamper seal through pull pin. Refer to the diagram on Page 56.

21. Using Leak-Tek or some other suitable medium, perform a leak check on the extinguisher. If the extinguisher leaks, repeat the entire recharge procedure.

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SERVICE/RECHARGE PROCEDURES (Cont.)

NOTE: After the leak check is performed, Buckeye recommends that the gauge reading be observed 24 – 48 hours later to verify there is no loss of pressure.

22. If no leakage is evident, dry the extinguisher and attach the hose and/or nozzle. Secure the hose into the hose band assembly if applicable.

23. Weigh the extinguisher and verify it meets the charged weight specified on the extinguisher nameplate.

24. Clean all dirt and foreign deposits from the extinguisher with a damp cloth.

25. Properly record and tag the extinguisher in accordance with NFPA-10 requirements.

26. Return and secure the extinguisher to its designated location.

WHEELED ENGINES – ADDITIONAL SERVICING PROCEDURES

1. Remove the pull pin and invert the wheeled extinguisher by rotating the unit backward about its wheel axis and resting it upon its handle. Then, while directing the hose nozzle in a safe and proper direction, squeeze the nozzle lever and valve operating lever simultaneously to relieve all extinguisher pressure.

2. Remove the hose/nozzle assembly from the valve by rotating counterclockwise. Verify that the nozzle is correct for the specific unit. Thoroughly examine the nozzle for any obstructions, cuts, cracks, abrasions, thread damage, or coupling damage.

3. Reconnect the hose assembly and ensure it is coiled correctly per NFPA-10 recommendations. Return the nozzle to the cart support post.

4. Examine the handle, operating lever, operation hold down clip, and rivets to ensure that they are secure. Replace if necessary.

5. Reinstall the pull pin. Install the tamper seal through pull pin. Refer to the diagram on Page 56.

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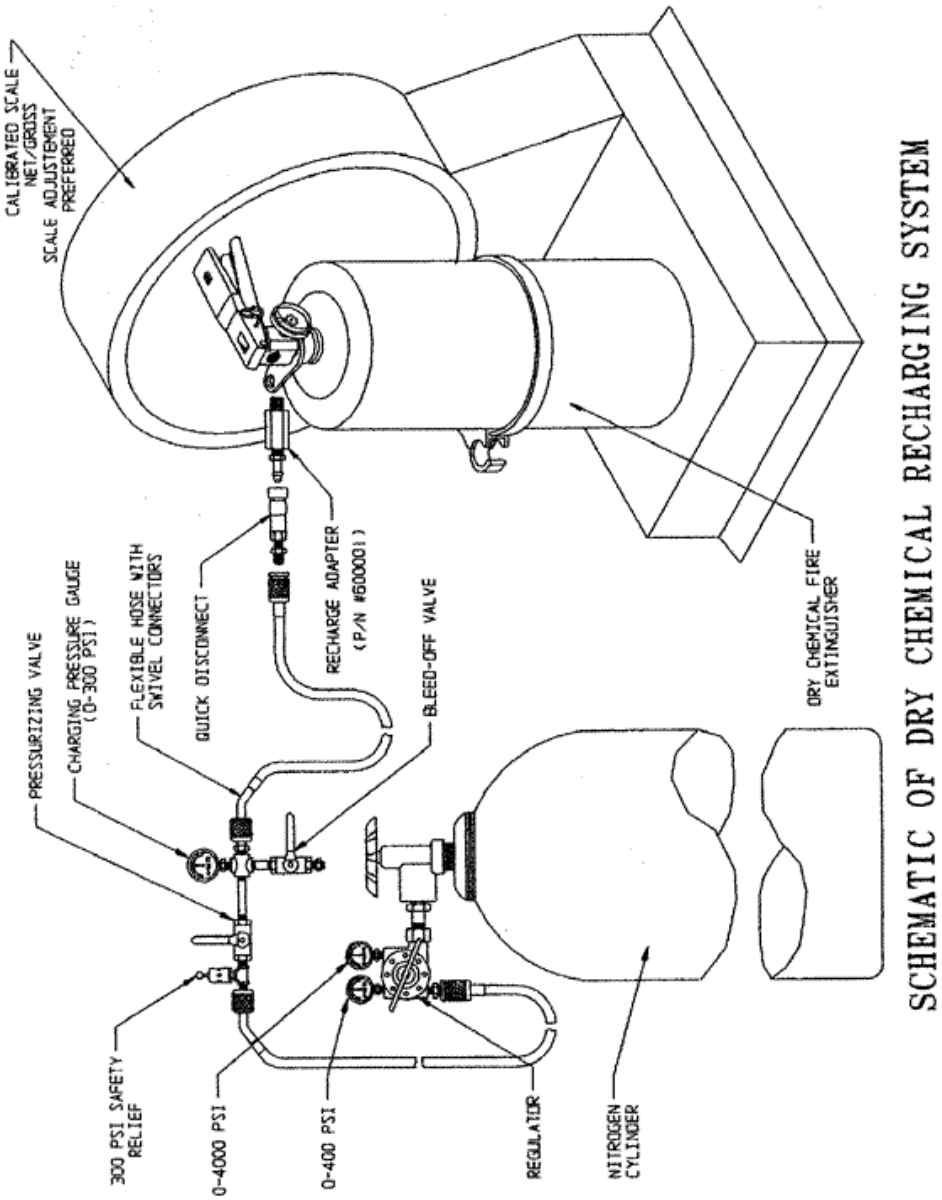

SCHEMATIC OF DRY CHEMICAL RECHARGING SYSTEM

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SECTION IV – HALON 1211 FIRE EXTINGUISHERS – 133501

MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of an extinguisher and is intended to provide maximum assurance that it will operate effectively and safely if needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye service/recharge procedures.

FREQUENCY: Maintenance of extinguishers shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTES: *Per NFPA-10, extinguishers put out of service for maintenance shall be replaced by spare extinguishers of the same agent type and, at minimum, equal rating.*

Only trained personnel using the proper tools, lubricants, and manufacturer recommended replacement parts should perform maintenance. These trained personnel should be able to properly identify any indications of extinguisher damage or defect and safely correct such conditions per the applicable service/recharge instructions.

Servicing Alert: *Effective immediately, all BUCKEYE Halon 1211 fire extinguishers must be subjected to a complete maintenance procedure (teardown) on an annual basis as outlined in this service manual.*

It is recommended that all o-rings, valve stem assemblies, and gauges be replaced with Buckeye genuine replacement parts.

Follow the instructions for proper evacuation and recharge of Halon 1211 extinguishers to ensure that water is not introduced into the cylinder.

Noncompliance with this alert relieves Buckeye Fire Equipment of all warranties and liabilities of this product.

1. Verify that the extinguisher is in its designated place and that there are no obstructions to block its visibility or access. Immediately correct any discrepancies.

2. Ensure that the operating instructions are legible and facing outward. Examine the inspection/service tag to determine if an annual teardown is due. (Per NFPA-10; Buckeye

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Halon extinguishers are subject to the 6-year service/recharge procedures specified in this manual. As noted, Buckeye recommends annual teardown.

SERVICE IV – HALON 1211 FIRE EXTINGUISHERS – 133501 (Cont.)

MAINTENANCE PROCEDURES (Cont.)

3. Check that the date of manufacture is listed on the nameplate or stamped into the cylinder. To determine if periodic hydrostatic testing is necessary, refer to the hydrostatic testing requirements on page 7.

4. Check the extinguisher gauge and verify it is within the proper operating range, not damaged, and is of the proper type. Replace annually.

5. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other physical conditions that might impair extinguisher function. Replace the valve stem shaft and neck o-rings.

6. Examine the nozzle and/or hose assembly for any obstructions, abrasions, cuts, cracks, or thread damage.

7. Examine the top portion of the valve assembly and verify that the valve stem is not corroded or damaged.

8. Verify that the handle and operating lever are not damaged and that the rivets are secure.

9. Examine the hose retainer band (if so equipped) and verify that it is secure and that it properly retains the hose.

10. Weigh the extinguisher and verify that it meets the total charged weight specified on the extinguisher nameplate.

11. Wipe all dirt or foreign deposits from the extinguisher with a damp cloth.

12. Properly tag the extinguisher per NFPA-10 recommendations and fill out necessary records.

13. Thoroughly examine the extinguisher wall hanger or vehicle bracket and verify that it is not damaged or worn and that it is securely mounted.

14. Return and secure the extinguisher to its designated location.

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SECTION IV – HALON 1211 FIRE EXTINGUISHERS – 133501 (Cont.)

SERVICE/RECHARGE AND RECLAIM PROCEDURES

SERVICE PARTS - Replacement parts used in servicing Buckeye Fire Equipment extinguishers must be authentic Buckeye supplied parts. Refer to the latest Buckeye Parts List and the model number located on the extinguisher nameplate to ensure correct part number references.

RECHARGE AGENT - Recharge the Buckeye Halon 1211 unit with pure, uncontaminated Bromochlorodifluoromethane, which meets military specification MIL-B-38741 dated July 30, 1965 and amendment No. 2 dated April 9, 1984.

PRESSURIZING GAS - Only standard industrial grade Nitrogen with a dew point of -60°F (-51.1°C) or lower shall be used to pressurize Buckeye Fire Equipment stored pressure Halon extinguishers. Dry air is not recommended.

1-YEAR TEARDOWN- Buckeye Fire Equipment stored Halon 1211 extinguishers shall be emptied and subjected to these service/recharge and reclaim procedures every year.

NOTE: The Montreal Protocol had defined Halon 1211 as an ozone depleting gas. In accordance with NFPA-10 requirements, any agent removal or filling of Halon 1211 extinguishers is to be done using a "listed" closed recovery Halon system only. There are several systems commercially available that will properly handle all models of Buckeye Halon 1211 extinguishers. Because these systems vary somewhat in design, Buckeye recommends that the systems specific recovery and filling procedures be followed whenever the servicing of Buckeye Halon extinguishers is necessary.

THE FOLLOWING SERVICE/RECHARGE PROCEDURES SHOULD BE FOLLOWED REGARDLESS OF WHAT TYPE OF SYSTEM IS UTILIZED.

1. Prior to performing any service, ensure that all of the Halon 1211 and pressure is removed. (Use "listed" closed recovery system). Refer to page 22 for typical recharge arrangement.

2. Remove the hose/nozzle assembly from the valve (if not already removed) by rotating counterclockwise. Verify that the nozzle is correct for the specific model. Thoroughly examine it for any internal blockage, external damage, or wear.

3. Verify that the nameplate is legible and facing outward.

4. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other physical conditions that might impair extinguisher function.

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SECTION IV – HALON 1211 FIRE EXTINGUISHERS – 133501 (Cont.)

SERVICE/RECHARGE AND RECLAIM PROCEDURES

5. Check the date of manufacture listed on the nameplate or stamped into the cylinder. To determine if periodic hydrostatic testing is necessary, refer to the hydrostatic testing requirements on Page 7.

6. Remove the valve assembly from the cylinder by rotating it counterclockwise.

   NOTES: *Valve body removal and installation only requires the use of firm hand pressure. Avoid the use of mallets as they may damage thread surfaces, handles, gauge, etc.*

   Ensure that the valve body and shell are kept together during service and recharge. The threads are not indexed and improper nameplate orientation may result from intermixing of components.

7. Remove the siphon tube from the valve body by rotating it counterclockwise. Examine and replace if any damage or thread wear is evident.

8. Remove the neck 0-Ring from the valve and discard. Replace with a new neck o-ring and lightly lubricate.

   NOTE: *Buckeye advises against the use of any Petroleum Solvents for cleaning and recommends the use of Visilox 711 lube for lubrication of o-rings and specified thread surfaces.* ***Do not lubricate stem seat****.*

9. Remove the valve stem and spring. Thoroughly examine and clean the spring with a dry cloth. Replace the spring if any deformation, corrosion, cracks or damage is evident. Replace the valve stem with a new one and lubricate the valve stem o-ring.

10. Examine and clean the valve body internal sealing surfaces, internal threads, and external threads with a stiff-bristled non-metallic brush. Replace the valve if any thread damage, wear, internal scratches, or other structural damage is evident.

11. Verify that the new pressure gauge specifies “For Halon 1211 Use Only” and matches the nameplate’s recommended operating pressure. Refer to the procedures on Page 56 for proper gauge replacement procedures.

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SERVICE/RECHARGE AND RECLAIM PROCEDURES

12. Examine the handle, operating lever, and rivets to ensure that they are secure. Replace if necessary.

    NOTE: *Examine the operating (top) lever, handle, and rivets to ensure they are secure and undamaged. Replace components if you find any deformation, loose rivets, bends, or other damage. Following the installation of a new valve stem, check (by lifting the operating lever) to be certain that the valve stem protrudes from the valve body approximately ¼ inch. The operating lever should be depressed to assure that the lever engages and depresses the valve stem top. If not, remove the unit from service. Worn parts or wrong parts can decrease the effectiveness of a fire extinguisher.*

13. Reassemble the valve and siphon tube in the following order:

    a) Using Visilox o-ring lube, sparsely lubricate the o-rings and metal external threaded surfaces.

    b) Using your finger, push the valve stem into the valve body until seated.

    c) Place the end of the spring onto and over the stem post. Buckeye Fire Equipment extinguishers have either straight or tapered springs. If a tapered spring is used, you must use valve stem P/N 103214. If valve stem P/N 103214 is not available, change to a straight stem. If a straight spring is used, you can use either valve stem P/N 103214 or P/N 103215.

    d) Press and screw the threaded siphon tube and adapter nut assembly over the spring and into the valve body with firm clockwise rotations until secure.

    e) Press the operating lever to assure proper movement.

    f) Pull on the siphon tube to ensure it is secure.

    g) Place a small dab of lubrication on top of the valve stem.

14. Install the valve assembly into the cylinder with clockwise rotations.

15. Fill the extinguisher to its rated capacity as specified on the extinguisher's nameplate. Use only pure, clean, uncontaminated Halon 1211 when charging Buckeye Halon 1211 extinguishers.

16. Pressurize the extinguisher with dry nitrogen to the specified charging pressure indicated on the nameplate by opening the pressure valve and depressing the operating lever. Refer to

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the calibrated charging pressure gauge to determine charge pressure. Do not rely on the extinguisher gauge for charging pressure.

SECTION IV – HALON 1211 FIRE EXTINGUISHERS – 133501 (Cont.)

SERVICE/RECHARGE AND RECLAIM PROCEDURES

17. Insert the extinguisher pull pin into the operating lever and then disconnect the pressurization source and remove the recharge adapter. Install an inspection seal through pull pin. Refer to the diagram on page 56.

18. Check for leaks around the nozzle, gauge, valve body, and cylinder neck area with a Halon leak detector (Do not use water). If leaks are detected, depressurize the unit and repeat the above steps, concentrating on the area where the leak was detected.

    NOTE: After the leak check is performed, it is recommended that the gauge reading be observed 24 – 48 hours later to assure against loss of pressure.

19. If no leakage is evident, attach the hose and/or nozzle and secure the hose into hose band assembly if so equipped.

20. Weigh the extinguisher and verify that the correct total charged weight is as specified on the extinguisher nameplate.

21. Clean all dirt and foreign deposits from extinguisher with a damp cloth.

22. Properly tag the extinguisher per NFPA-10 recommendations and fill out necessary records.

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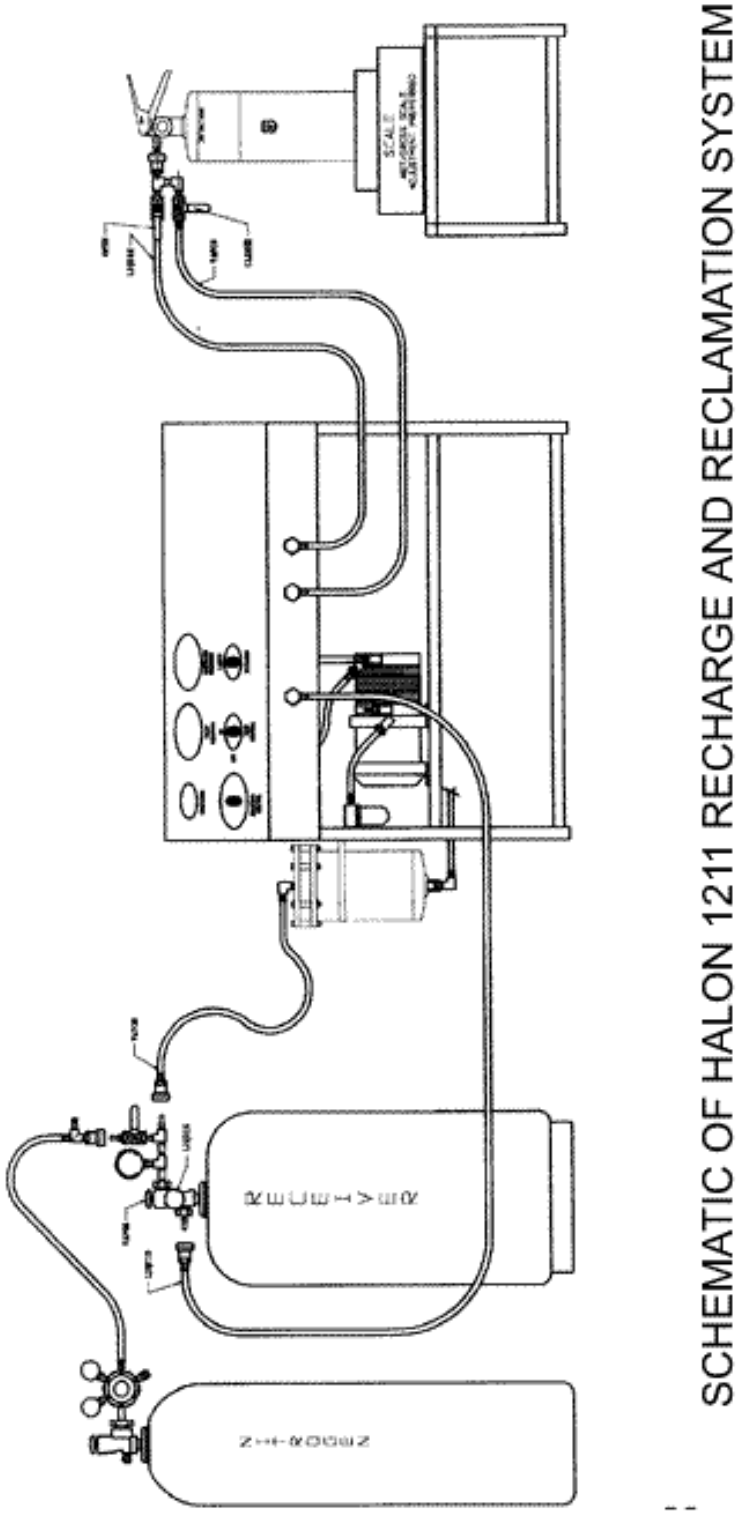
SECTION IV – HALON 1211 FIRE EXTINGUISHERS – 133501 (Cont.)



SCHEMATIC OF HALON 1211 RECHARGE AND RECLAMATION SYSTEM

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SECTION V - HALOTRON I FIRE EXTINGUISHERS - 133901

PROPERTIES OF HALOTRON I

Halotron I Fire Extinguishers contain dichlorotriflouroethane (HCFC-123) and a proprietary gas mixture. Halotron I is designed for streaming fire protection applications and is listed in the United States (U.S.) Environmental Protection Agency (EPA) Significant New Alternative Policy (SNAP) as acceptable for nonresidential applications. Refer to SNAP Program rules for more information.

Halotron I has acceptable toxicity and cardiac sensitization levels for use in occupied spaces when used as specified in the U.S. EPA SNAP program rules and the markings on the extinguisher.

PHYSICAL PROPERTIES OF HALOTRON I (Not for specification purposes)

Chemical Formula	Dichloro-trifluoroethane (HCFC-123) and a proprietary gas mixture
Boiling Point	@ 1 ATM
Liquid Density	@ 2.3 lb./ft. 3 @ 77° F (23°C)
Gas Density	@ .385 lb./ft. 3 @ 68°F (20°C)
Molecular Weight	150.7
Physical State	Pressurized Liquid
Vapor Pressure @ 20°C - 68°F (liquid alone)	11.2 PSIG (77 kPa)
Pressure of mixture in container @ 20° C - 68° F	95 PSIG in bulk container

MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of an extinguisher and is intended to provide maximum assurance that it will operate effectively and safely if needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye Fire Equipment service/recharge procedures.

FREQUENCY: Maintenance of extinguishers shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTE: Per NFPA-10, extinguishers out of service for maintenance shall be replaced by spare extinguishers of the same type and at least equal rating.

NOTE: Maintenance should be performed by trained personnel using the proper tools, lubricants and manufacturer's recommended replacement parts. These trained personnel should be able to properly identify any indications of extinguisher damage or defect and to safely correct such conditions per the applicable service/recharge instructions.

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SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

MAINTENANCE PROCEDURES (cont.)

1. Verify the extinguisher is in its designated place with no obstructions to block its visibility or access. Immediately correct any discrepancies.

2. Verify the operating instructions are legible and face outward. Examine the inspection/service tag to determine if a 6-year teardown is due. (Halotron I Extinguishers are subject to the 6-year service/recharge procedures specified in this manual).

3. Check that the date of manufacture is listed on the nameplate or stamped into the cylinder to determine if periodic hydrostatic testing is necessary. Refer to the hydrostatic testing requirements listed on page 7.

4. Check the extinguisher gauge and verify it is within the proper operating range, undamaged, and is of the proper type.

5. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other conditions that might impair extinguisher function.

6. Examine the nozzle and/or hose assembly for any obstructions, abrasions, cuts, cracks, or thread damage.

7. Examine the top portion of the valve assembly and verify that the valve stem is not corroded or damaged.

8. Verify that the handle and operating lever are not damaged and that the rivets are secure.

9. Examine the hose retainer band (if so equipped) and verify it is secure and properly retains the hose.

10. Weigh the extinguisher and verify it is within the correct total charged weight specified on the extinguisher nameplate.

11. Wipe all dirt or foreign deposits from the extinguisher with a damp cloth.

12. Properly tag the extinguisher per NFPA-10 recommendations and fill out necessary records.

13. Thoroughly examine the extinguisher wall hanger or vehicle bracket and verify it is not damaged or worn and that it is securely mounted.

14. Return and secure the extinguisher to its designated location.

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SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

SERVICE/RECHARGE PROCEDURES

SERVICE PARTS:	Replacement parts used in servicing Buckeye Fire Equipment extinguishers must be authentic Buckeye supplied parts. Refer to the latest Buckeye Fire Equipment Parts List and the model number located on the extinguisher nameplate to ensure correct part number references.
RECHARGE AGENT:	Recharge Halotron I units with pure pre-saturated Halotron I supplied by Buckeye Fire Equipment. Follow the instructions in the Halotron Recharging Kit or as follows to properly fill and pressurize the unit.
PRESSURIZING GAS:	Only ultra high purity Argon shall be used to pressurize Stored Pressure Halotron I extinguishers. Dry air and nitrogen are not to be used.
VACUUM PROCEDURE:	It is necessary to draw a vacuum of 27 inches mercury prior to refilling a unit to make certain all moisture is removed from the cylinder. See instructions on vacuum system for proper procedures.
6-TEAR TEARDOWN	Per NFPA-10, stored pressurized fire extinguishers shall be emptied and subjected to these service/recharge procedures every six (6) years.

WARNING/SAFETY POINT: ***As specified in ANSI/UL 2129 and outlined on each unit label, this concentrated agent can produce toxic byproducts. Avoid inhalation of these materials by evacuating the confined space. Do not use in confined spaces less than specified in the warning statement on the extinguisher label.***

THE FOLLOWING SERVICE/RECHARGE PROCEDURES SHOULD BE FOLLOWED REGARDLESS OF WHAT TYPE OF SYSTEM IS UTILIZED

1. Prior to performing any service, ensure all Halotron I and pressure are removed from the cylinder.

2. Remove the hose/nozzle assembly from the valve (if not already removed) with counter-clockwise rotations. Verify that the nozzle is correct for the specific model and thoroughly examine it for any internal blockage or external damage and wear.

3. Verify the nameplate is legible and faces outward.

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4. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other conditions that might impair extinguisher function.

SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

SERVICE/RECHARGE PROCEDURES (cont.)

5. Check the date of manufacture listed on the nameplate or stamped into the cylinder to determine if periodic hydrostatic testing is necessary. Refer to the hydrostatic testing requirements on page 7.

6. Remove the valve assembly from the cylinder with counter-clockwise rotations.

   NOTE: Normal valve body removal and installation only requires the use of firm hand pressure. Avoid the use of mallets as they may damage thread surfaces, handles, gauges, etc.

   NOTE: Ensure that the original valve body and cylinder are kept together during service and recharge. The threads are not indexed and improper nameplate orientation may result with intermixing of components.

7. Remove the siphon tube from the valve body with counter-clockwise rotations. Examine and replace if any damage or thread wear is evident.

8. Remove the neck o-ring from the valve and discard. Replace with a new lightly lubricated o-ring.

   NOTE: Buckeye Fire Equipment advises against the use of any petroleum solvents for cleaning. The use of "Visilox 711" lube for lubrication of o-rings and specified thread surfaces is recommended. Do not lubricate the stem seat.

9. Remove the valve stem and spring. Thoroughly examine and clean the spring with a dry cloth. Replace if any deformation, corrosion, cracks, or damage is evident. Replace the valve stem assembly with a new one (as it may be saturated with Halotron I) and lubricate the valve stem o-ring.

10. Examine and clean the valve body internal seating surfaces, internal threads, and external threads with a stiff-bristled (non-metallic) brush. Replace the valve if any thread damage, wear, internal scratches, or other structural damage is evident.

    NOTE: Nicks, scratches, or residual contaminants left on valve seating surfaces can result in a loss of pressure.

11. Verify that the operating gauge specifies "For Halotron I Use Only", matches the nameplate's recommended operating pressure, and is undamaged. If gauge replacement is necessary, refer to the procedure on page 56.

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SERVICE/RECHARGE PROCEDURES (cont.)

12. Examine the handle, operating lever, and rivets to ensure that they are secure. Replace as necessary.

    NOTE: Examine the operating (top) lever, handle, and rivets to verify they are secure and undamaged. Replace the unit if you find any deformation, loose rivets, bends, or other damage.

    Following the installation of a new valve stem, check (by lifting the operating lever) that the valve stem protrudes from the valve body approximately ¼ inch. The operating lever should be depressed to assure that the lever engages and depresses the valve stem top. If not, remove the unit from service. Worn parts or wrong parts can decrease the effectiveness of a fire extinguisher.

13. Reassemble the valve and siphon tube in the following order:

    a) With Visilox o-ring lube, lightly lubricate the o-rings and external threaded surfaces.
    b) Using a finger, push the valve stem into the valve body until it seats.
    c) Place the end of the spring onto and over the stem post.
    d) Press and screw the threaded metal siphon tube over the spring and into the valve body with firm clockwise rotations until it is secure.
    e) Press the operating lever to assure proper movement.
    f) Pull on the siphon tube to verify it is secure.
    g) Place a small dab of lubrication on top of the valve stem.

14. Install the valve assembly into the cylinder with clockwise rotations.

    CAUTION: ***The following are general instructions for recharging Halotron I fire extinguishers. However, Buckeye Fire Equipment highly recommends the use of it's designated "HALOTRON I RECHARGING KIT", Part No. 64000, for the proper vacating, filling, and pressurizing of Halotron I extinguishers.***

15. Pull a vacuum of 27 inches mercury (at sea level, this will vary with altitude) on the cylinder prior to filling. (See your vacuum pump manual for additional operating instructions.)

16. Fill the extinguisher to its rated capacity as specified on the extinguisher's nameplate. Use only pure, clean, uncontaminated Halotron I when recharging extinguishers.

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17. Connect the cylinder to be filled to a Halotron I supply tank. The supply tank must be pressurized with Argon to approximately 100 PSI in order to fill a unit. Place the unit on a scale. Press the operating lever until the desired charge weight is obtained.

SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

SERVICE/RECHARGE PROCEDURES (Cont.)

WARNING/SAFETY POINT: ***To avoid personal injury or equipment damage, never connect an extinguisher directly to an Argon pressurization source. Always utilize an adjustable and calibrated Halotron I regulator set at 25 PSI over the intended extinguisher charging pressure. Ensure that the proper hoses, adapters, and connections are used and that the operator avoids standing directly in front of the extinguisher gauge when pressurizing the unit.***

WARNING/SAFETY POINT: ***To avoid personal injury and prevent equipment damage, never allow extinguishers to remain connected to a pressurization source as any equipment defect could result in excess cylinder pressure and rupture.***

18. Pressurize the extinguisher with Argon to the specified charging pressure indicated on the nameplate by opening the pressure valve and depressing the extinguisher operating lever. Refer to the calibrated charging pressure gauge to determine charge pressure. Do not rely on the extinguisher gauge for charging pressure. Set the regulator not more than 25 PSIG above the unit charge pressure.

19. In order to mix the Halotron pre-saturated agent with the Argon, it will be necessary to rock the extinguisher horizontally a few times and then check to make certain the pressure is within its operating range. Top off the pressure until the proper pressure is reached.

20. Insert the extinguisher pull pin into the operating lever. Disconnect the pressurization source and remove the recharge adapter. Install an inspection seal through the pull pin. Refer to the diagram on page 56.

21. Using a Halotron leak detector or Leak-Tek, check around the nozzle, gauge, valve body, and cylinder neck area for leaks. (When using Leak-Tek, look for bubbles). Do not use water if leaks are detected. Depressurize the unit and repeat the above steps, concentrating on the area where the leak was detected.

NOTE: After the leak check is performed, it is recommended that the gauge reading be observed 24 – 48 hours later to assure against loss of pressure.

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22. If no leakage is evident, attach the hose and/or nozzle and secure the hose into the hose band assembly, if so equipped.

23. Weigh the extinguisher and verify it is within the correct total charged weight as specified on the extinguisher nameplate.

SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

SERVICE/RECHARGE PROCEDURES (Cont.)

24. Clean all dirt and foreign deposits from extinguisher with a damp cloth.

25. Properly tag the extinguisher in accordance with NFPA-10 requirements and fill out necessary records.

26. Return and secure the extinguisher to its designated location.

ALTERNATE A

THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED WHEN RECLAIMING PARTIALLY USED HALOTRON I FIRE EXTINGUISHERS.

It will be necessary to purchase an empty Halotron Recovery Cylinder to act as a holding tank for reclaimed Halotron I. You may pressurize the holding tank to refill other extinguishers that you are servicing. See page 31 for typical Recharge System.

Before proceeding, make sure the Halotron I is not contaminated. If clean, proceed as follows:

1) Unscrew the discharge hose or nozzle from the valve body.
2) Screw a fill adapter into the valve body.
3) Connect the cylinder to be emptied to the reclaim tank using proper type hose.
4) Open the liquid valve and close the vapor valve connections on the reclaim tank.
5) Press the operating lever down until the extinguisher to be emptied has discharged completely.
6) Close the liquid valve on the reclaim tank.
7) Check to make certain the unit is empty. It may be necessary to bring the pressure up to the charge pressure to discharge the entire contents into the reclaim tank. Also, after discharging a number of units into the reclaim tank, it may be necessary to bleed off pressure by momentarily opening the vapor valve.

NOTE: After the unit has been emptied, proceed with servicing as outlined beginning on page 25.

ALTERNATE B

THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED FOR REMOVING HALOTRON I FROM UNITS THAT HAVE LEAKED ALL PRESSURE.

NOTE: It will be necessary to have a Buckeye Halotron I Recharging Kit, Part No. 64000, and its instructions before proceeding with this operation.

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If the extinguisher has leaked pressure to a level below 50 PSIG, it should be considered a "leaker" and should be recovered in a different manner as described in Section IV. This is to ensure quality of the chemical blend, which includes (HCFC-123) and a proprietary gas mixture.

IMPORTANT: ***Before proceeding, make sure that the remaining material in the extinguisher is not contaminated. If it is clean, then proceed.***

SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

SERVICE/RECHARGE PROCEDURES (Cont.)

The material is to be placed into a Halotron I Recovery Cylinder. The Recovery Cylinder should be partially emptied by at least the amount to be added.

REPRESSURIZE THE LEAKER FOR RECOVERY OF THE AGENT AS FOLLOWS:

1) Make sure the lines are purged and valves 1, 2, and 3 are in the closed position.

2) Adjust the Argon regulator handle (H) 25 PSIG above the extinguisher operating pressure.

   NOTE: Be certain that the pressure in the Recovery Cylinder is less than the operating pressure of the extinguisher being serviced. This prevents flow into the extinguisher.

3) Unscrew the discharge hose or nozzle from the valve body.

4) Screw the fill adapter (J) into the valve body (M).

5) Connect the quick disconnect (G) to the fill adapter (J).

6) Slowly open the Argon tank valve (I) all the way.

7) Open valve #1 slowly.

8) Open the extinguisher operating lever (M) until pressure stabilizes.

9) Close the extinguisher operating lever (M).

10) Close valve #1.

PROCEED WITH TRANSFERRING HALOTRON I INTO RECOVERY CYLINDER AS FOLLOWS:

11) Vent hose (6).

12) Open the supply cylinder liquid valve (K).

13) Open the extinguisher operating lever (M).

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14) Open valve #2 to allow the flow of the extinguisher contents back into the Recovery Cylinder.

SECTION V – HALOTRON I FIRE EXTINGUISHERS – 133901 (Cont.)

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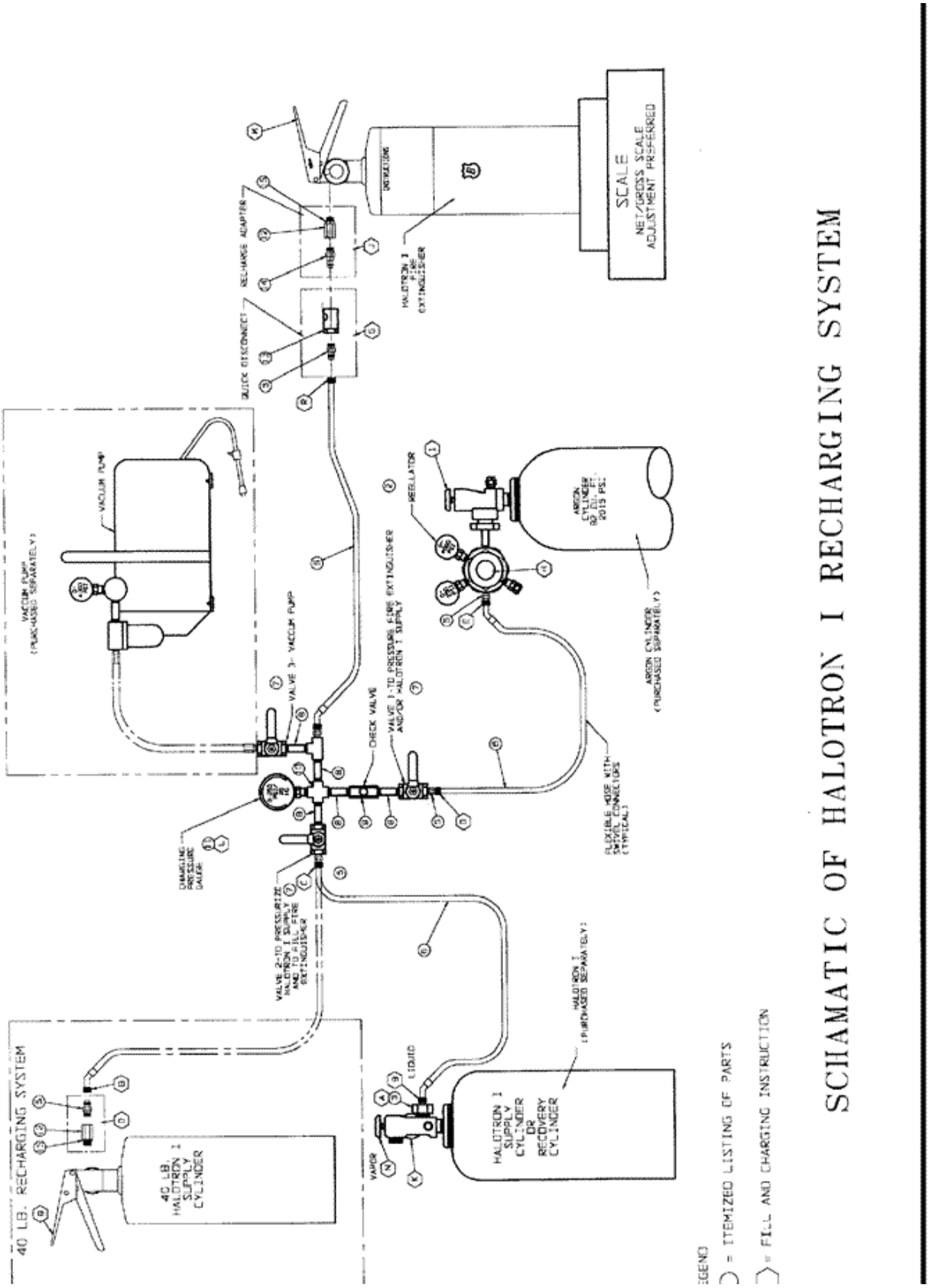

SECTION VI – CARBON DIOXIDE FIRE EXTINGUISHERS – 133601

BUCKEYE FIRE EQUIPMENT COMPANY

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MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of an extinguisher and is intended to provide maximum assurance that it will operate effectively and safety if needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye service/recharge procedures.

FREQUENCY: Maintenance of extinguishers shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTE: Per NFPA-10, extinguishers out of service for maintenance shall be replaced by spare extinguishers of the same type and at least equal rating.

NOTE: Maintenance should be performed by trained personnel using the proper tools, lubricants and manufacturer's recommended replacement parts. These trained personnel should be able to properly identify any indications of extinguisher damage or defect and to safely correct such conditions per the applicable service/recharge instructions.

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1. Verify that the extinguisher is in its designated place with no obstructions to block its visibility or access. Immediately correct any discrepancies.

2. Verify the operating instructions are legible and face outward.

3. Check that the date of manufacture is listed on the nameplate or stamped into the cylinder to determine if periodic hydrostatic testing is necessary. Refer to hydrostatic testing requirements listed on page 7.

4. Visually examine the safety relief assembly for any damage, corrosion or obstruction.

5. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other conditions that might impair the extinguisher function.

   NOTE: For additional inspection pertaining to aluminum compressed gas cylinders, refer to CGA Pamphlet C-6.1.

6. Remove the hose and horn to examine for any obstructions, abrasions, cuts, cracks or thread damage. Verify that it is correct for the specified model extinguisher.

7. On 10 lb., 15 lb., and 20 lb. models, inspect the diffuser holes to ensure that they are undamaged and not obstructed.

SECTION VI – CARBON DIOXIDE FIRE EXTINGUISHERS – 133601

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8. Perform a conductivity test on all 10, 15 and 20 lb. Hose Assemblies per NFPA-10 recommendations, then reinstall the hose assembly. (The hose shall be replaced if it does not meet test requirements). Label the hose assemblies passing conductivity test per NFPA-10 recommendations.

9. Examine the top portion of the valve assembly and verify that the valve stem is not corroded or damaged. Replace it if necessary.

10. Verify that the handle and operating lever are not damaged and that the rivets are secure.

11. Weigh the extinguisher, verifying the total charge weight stamped into the valve body against the nameplate recommendations.

12. Clean all dirt or foreign deposits from the extinguisher with a damp cloth.

13. Properly tag the extinguisher per NFPA-10 recommendations and fill out the necessary records.

14. Thoroughly examine the extinguisher wall hanger or vehicle bracket and verify it is not damaged or worn and that it is securely mounted.

15. Return and secure the extinguisher to its designated location.

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SERVICE/RECHARGE PROCEDURES

SERVICE PARTS: Replacement parts used in servicing Buckeye Fire Equipment extinguishers must be authentic Buckeye supplied parts. Refer to the latest Buckeye Fire Equipment Parts List and the model number located on the extinguisher nameplate to ensure correct part number references.

RECHARGE AGENT: Buckeye Fire Equipment extinguishers shall only be recharged with uncontaminated carbon dioxide having a vapor phase equal to or greater than 99.5%. The water content of the liquid phase shall not be more than 0.001% by weight (-30° F [-34.4° C] dew point). Oil content of the carbon dioxide shall not exceed 10 ppm by weight.

WARNING/SAFETY POINT: ***To avoid personal injury, always use gloves and eye protection when servicing carbon dioxide extinguishers. The agent discharge is very cold and can cause frostbite or freeze burns.***

WARNING/SAFETY POINT: ***To avoid personal injury or death, always service and discharge carbon dioxide extinguishers in well ventilated areas. Sufficient concentrations of carbon dioxide will deplete the oxygen supply which can result in a loss of consciousness and possible death.***

WARNING/SAFETY POINT: ***To avoid personal injury or equipment damage, always ensure the correct Buckeye safety relief components specified in the Parts List are used. Improper parts could result in serious cylinder rupture.***

WARNING/SAFETY POINT: ***To avoid personal injury or equipment damage, before performing any servicing or recharge, ensure all pressure has been completely relieved from the extinguisher by directing the horn into a proper discharge area and depressing the operating lever.***

CO^2 CHARGING CHART

UNIT	CHARGE LBS./(KG)	CHARGE TOLERANCE OZ./(G)	
45100 } 45191	5 / (2.27)	+ 8 / (227)	-0
45600 } 45691	10 / (4.54)	+ 8 / (227)	-0
46100 } 46191	15 / (6.81)	+ 8 / (227)	-0
46600 } 46691	20 / (9.08)	+10 / (284)	-0

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SERVICE/RECHARGE PROCEDURES

1. Completely empty and depressurize the extinguisher by removing the ring pin, aiming the nozzle in safe direction, and depressing the operating lever. It is highly recommended this action be done outdoors.

2. Verify that the nameplate is legible and faces outward.

3. Remove the hose and nozzle to examine for any abrasions, obstructions, butts, cracks, or thread damage. Verify it is the correct one for the specific model of extinguisher.

4. Perform a conductivity test on all 10, 15 and 20 lb. hose assemblies per NFPA-10 recommendations. (Hose assemblies found to be nonconductive from the coupling shall be replaced.) Label hose assemblies passing the conductivity test per NFPA-10 recommendations.

5. On 10, 15 and 20 lb. models, inspect the diffuser hose to verify they are undamaged and unobstructed.

6. Thoroughly examine the extinguisher cylinder and components for any damage, corrosion, burns, repairs, or other physical conditions that might impair the extinguisher function.

   NOTE: For additional inspection information pertaining to aluminum compressed gas cylinders, refer to CGA Pamphlet C-6.1.

7. Check the date of manufacture stamped into the cylinder to determine if periodic hydrostatic testing is necessary. Refer to the hydrostatic testing requirements on page 7.

   NOTE: CO^2 Hose Assemblies require hydrostatic testing at the same intervals as cylinders.

8. If hydrostatic testing or internal examination is NOT required, proceed to Step 18.

9. Remove the valve assembly from the cylinder with counterclockwise rotations.

   NOTE: Ensure the original valve body and shell are kept together during service and recharge. These threads are not indexed and improper nameplate orientation may result from intermixing of components.

10. Thoroughly examine the cylinder internally for any corrosion, contaminates, or damage.

    NOTE: If any worn or otherwise damaged thread surfaces are observed, Buckeye Fire Equipment recommends that the part be replaced.

SECTION VI – CARBON DIOXIDE FIRE EXTINGUISHERS – 133601

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11. Remove the siphon tube and retainer nut from the valve body with counterclockwise rotations. Examine and replace if any damage or thread wear is evident.

12. Remove the valve stem and spring. Examine them for any damage or deformation. Remove and replace the valve stem o-ring with a new one.

13. Remove and replace the valve o-ring with a new one. Examine and clean the valve body seating surfaces with a damp cloth.

    NOTE: *Nicks, scratches, or residual contaminants left on valve seating surfaces can result in loss of pressure.*

14. Remove the safety relief nut, washer, and disc assembly and replace with a new assembly. Install a new washer into the valve port followed by a safety disc and a safety relief nut. Torque the nut to 32 ft/lbs.

15. Reassemble the valve and siphon tube in the following order:

    a) Lightly lubricate the o-rings and external metal threaded surfaces.

    b) Using a finger, push the valve stem into the valve body until it is seated. Verify that the top portion of the stem extends beyond the valve body at least 3/8 inch.

    c) Place the small end of the spring onto and over the stem post.

    d) Push the threaded metal siphon tube or plastic siphon tube and adapter nut assembly over spring and screw it into the valve body with firm clockwise rotations until secure.

    e) Press the operating lever to verify there is proper movement.

    f) Pull on the siphon tube to verify it is secure.

16. Screw the valve and siphon tube assembly into the cylinder with clockwise rotations.

    NOTE: *Normal valve body removal and installation only requires the use of firm hand pressure. Avoid the use of mallets as they may damage thread surfaces, handles, etc.*

17. Examine the handle, operating lever, and rivets to verify that they are secure. Replace if necessary.

18. Install the correct Buckeye Fire Equipment Recharge Adapter on the extinguisher. (Buckeye Adapter P/N – 600004 for 5 lb. swivel diffuser model. Buckeye Adapter P/N – 600003 for the 10, 15, and 20 lb. elbow diffuser models).

SECTION VI – CARBON DIOXIDE FIRE EXTINGUISHERS – 133601

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WARNING/SAFETY POINT: ***To avoid personal injury, always use gloves and eye protection when servicing carbon dioxide extinguishers. The agent discharge is very cold and can cause frostbite or freeze burns.***

WARNING/SAFETY POINT: ***To avoid personal injury or death, always service and discharge carbon dioxide extinguishers in well ventilated areas. Sufficient concentrations of carbon dioxide will deplete the oxygen supply and can result in a loss of consciousness and possible death.***

19. Using carbon dioxide meeting Buckeye Fire Equipment specifications, fill the extinguisher to the proper charge weight indicated on the nameplate and total weight stamped on the valve. Refer to the diagram on page 38 for a typical CO^2 recharging system. Follow the pump manufacturer's recommendations for fill procedure.

20. When the desired weight is obtained, close the charging valve, open the bleed-off valve, and disconnect the recharge adapter from the extinguisher.

21. Install the pull pin through the extinguisher operating lever and valve body. Install a tamper seal to secure the pull pin.

22. Test the extinguisher for leakage by either using commercially available solutions such as Leak-Tek or by submerging the valve in a water bath for several minutes. (Any bubbles would indicate leakage. The unit should be properly depressurized and the service/recharge procedures repeated.)

23. If no leakage is evident, reassemble the horn and/or hose assembly into the valve outlet elbow diffuser.

24. Clean all dirt and foreign deposits from the extinguisher with a damp cloth.

25. Tag the extinguisher in accordance with NFPA-10 recommendations and record all necessary information.

26. Return the extinguisher to its designated location.

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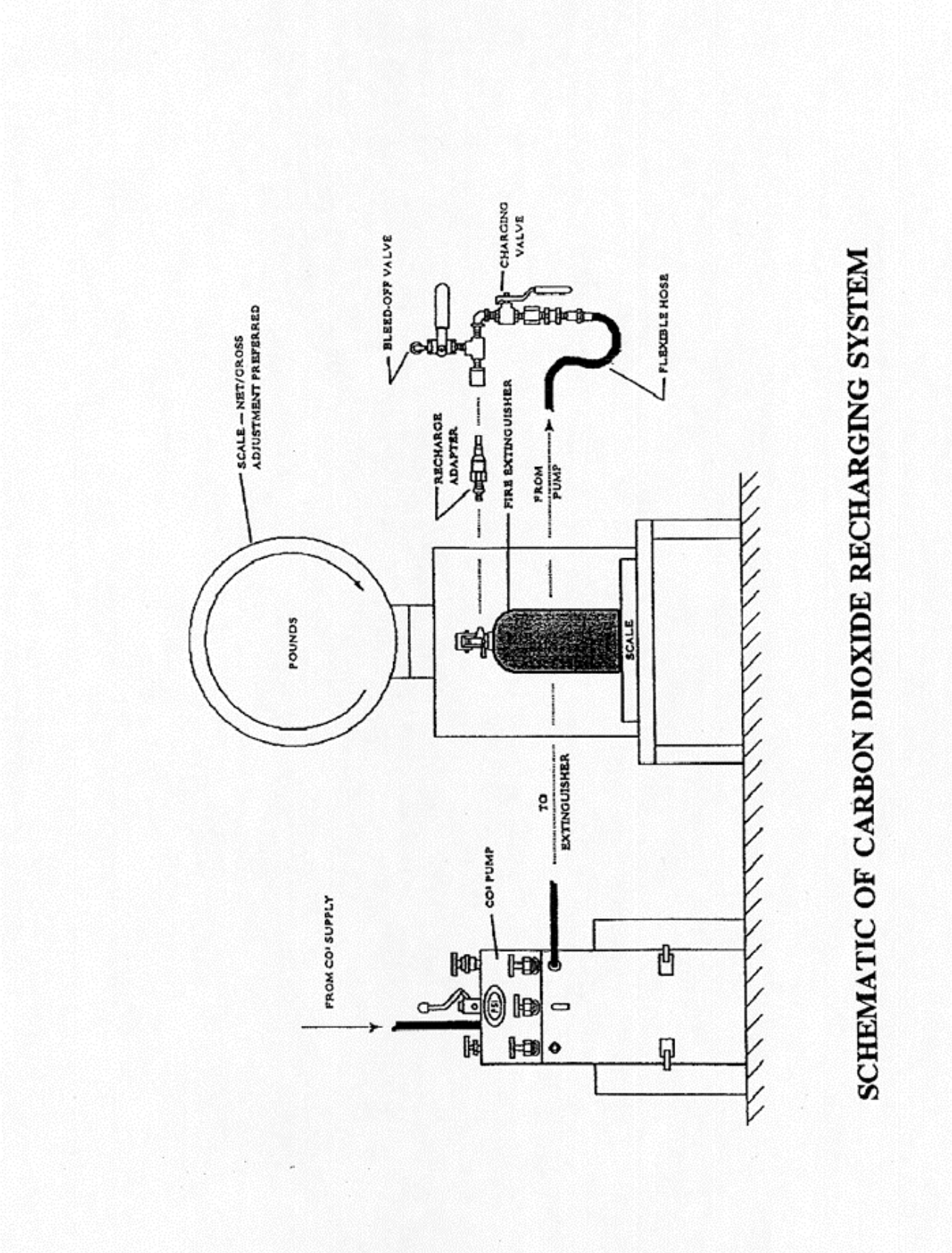

SCHEMATIC OF CARBON DIOXIDE RECHARGING SYSTEM

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SECTION VII – WET CHEMICAL EXTINGUISHERS – 133301

WET CHEMICAL EXTINGUISHERS

Buckeye Fire Equipment 6 liter and 2-1/2 gallon Wet Chemical fire extinguishers have been specifically designed to combat fires in restaurant kitchen cooking appliances. The fire extinguishing agent is a potassium acetate / potassium citrate and water solution, the same liquid agent used in most kitchen fire suppression systems. Newer, more efficient cooking appliances, plus the use of non-saturated cooking oils require a fire extinguishing agent which will not only smother a fire but provide a cooling effect. This cooling effect is better realized with a Wet Chemical agent than with previously recommended dry chemicals.

These attractive, easy to use and maintain stainless steel extinguishers have a nondisruptive spray nozzle which limits the scattering of the burning material. There is no blinding cloud of chemical so the user is able to apply the agent just where it is needed to extinguish the fire. Cleanup is quicker and easier since airborne particles do not spread to other areas.

MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of the extinguisher and is intended to provide maximum assurance that it will operate effectively and safely if needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye Fire Equipment service/recharge procedures.

FREQUENCY: Maintenance of extinguishers NFPA-10 shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTES: *Per NFPA-10, extinguishers out of service for maintenance shall be replaced by spare extinguishers of the same type and at least equal rating.*

Maintenance should be performed by trained personnel using the proper tools, lubricants, and manufacturer's recommended replacement parts. They should be able to properly identify any indications of extinguisher damage or defect and safely correct such conditions per the applicable service/recharge instructions.

MAINTENANCE – SERVICE PROCEDURES

1. Clean the extinguisher to remove dirt, grease, or foreign material. Check to make sure that the instruction nameplate is securely fastened and legible. Inspect the cylinder for corrosion, abrasion, dents, or weld damage. If any of these conditions are found and you doubt the integrity of the cylinder, hydrostatically test it using the proof pressure method and a suitable cage, in accordance with CGA Pamphlet C-1 and NFPA Pamphlet 10.

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MAINTENANCE – SERVICE PROCEDURES (Cont.)

NOTE: When cleaning, avoid the use of solvents around the pressure gauge. They could seriously damage the plastic gauge face.

2. Inspect the extinguisher for damaged, missing, or substitute parts. Only factory replacement parts are approved for use in Buckeye Fire Equipment extinguishers.

3. Weigh the extinguisher and compare with the weight printed in the Maintenance section of the nameplate (label). Recharge the extinguisher if the weight is not within the allowable tolerances.

4. Check the date of manufacture on the extinguisher nameplate. Cylinders must be hydrostatically tested every 5 years to the test pressure indicated on the nameplate. Buckeye Fire Equipment recommends that the extinguishing agent be replaced with a new Buckeye charge at the time of hydrostatic test. Refer to the hydrostatic testing requirements on page 7.

5. Visually inspect the pressure gauge:

   a) If it is bent, damaged, or the wrong gauge, depressurize and replace.

   b) If the pressure is low, check the unit for leaks.

   c) If the unit is overpressurized (overcharged), invert the extinguisher and reduce the pressure to 50 PSI by depressing the operating lever. Quickly repressurize the unit to 100 PSI to avoid liquid clogging the pressure valve. Check for leaks.

6. Inspect the footstand (base). If cracked or broken, replace with a proper footstand.

7. Check the pull pin for freedom of movement by breaking the seal and removing the pin. Replace the pull pin if it is bent or difficult to remove.

8. Inspect the operating lever for dirt or corrosion which might impair freedom of movement. Inspect the handle for proper installation. If the lever, handle, or rivets are damaged or distorted, replace them with the proper Buckeye Fire Equipment replacement part(s).

9. Remove the hose/wand/nozzle assembly. Inspect the hose gasket (o-ring), hose/wand, and nozzle for damage. Replace as necessary. Blow air through the hose/wand/nozzle assembly to verify the passage is clear of foreign material.

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MAINTENANCE – SERVICE PROCEDURES (Cont.)

10. Examine the pressurizing valve (Schrader) for damage. The cap should be in place to prevent leaking. Inspect the valve assembly for corrosion or damage to the hose thread connections. Replace the valve assembly or component parts as necessary. Follow the proper depressurization and recharge procedures.

11. Reinstall the hose/wand assembly.

12. Install a new tamper seal and record the service data on the extinguisher inspection tag.

13. Re-hang the extinguisher on the wall hanger bracket. Verify that it fits the hanger bracket properly. Replace the bracket if necessary.

RECHARGE

Recharging NFPA-10 is the replacement of the extinguishing agent and the expellant for this type of extinguisher.

WARNING/SAFETY POINT:

a) Before attempting to recharge, be sure this extinguisher is completely depressurized.

b) Use a regulated pressurizing source (either air or Nitrogen). Set the regulator to no more than 25 PSI higher than the gauge operating pressure.

c) Check and calibrate the regulator gauge at frequent intervals. The regulator gauge should be used to determine when the intended charging pressure has been reached. Do not use the extinguisher gauge for this purpose.

d) Never leave an extinguisher connected to a regulator of a high pressure source for an extended period of time. A defective regulator could cause the cylinder to rupture from excessive pressure.

RECHARGING PROCEDURES

1. Complete the "Maintenance – Service Procedure", Item 1 thru 10.

2. Discharge all remaining pressure and wet chemical solution. Make sure that there is no remaining air pressure.

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3. Remove the valve assembly. Disassemble it by removing the siphon tube assembly (use a wrench on the brass retainer, not the plastic tube), spring and valve stem from the valve assembly. Remove the collar o-ring from the valve assembly.

RECHARGING PROCEDURES (Cont.)

4. Thoroughly rinse all parts with clean water and wipe dry with a soft cloth. Blow the valve out with air or nitrogen. Inspect the collar o-ring, valve steam, and spring. Replace parts if worn or damaged. Lightly lubricate the collar o-ring and small o-ring on the valve stem with Visilox V-728 (DO NOT LUBRICATE THE VALVE STEM SEAL). Inspect the siphon tube. If cracked or deformed, replace with the proper tube (see parts list). Inspect the siphon tube o-ring and replace if necessary.

5. Rinse the cylinder with clean water and inspect the interior following CGA Visual Inspection Standard, Pamphlet C-6.

6. Carefully follow the solution mixing instructions on the charge carton.

7. Reinstall the valve assembly to the cylinder and properly align.

CAUTION: Hand-tighten the valve collar nut (100-125 in. – lbs. max.). Overtightening with a wrench will damage the valve.

8. Remove the cap from the pressurizing valve (Shrader) on side of the valve body and pressurize the extinguisher to 100 PSI with air or nitrogen. The pressure regulator should be set to no more than 125 PSI. After pressurization is complete reinstall the pressure valve cap. The cap must be in place to ensure that valve will not leak.

9. Check the collar, gauge, pressurizing valve, cylinder welds, and valve orifice for leaks using leak detection fluid or a solution of soapy water. Remove the leak detection fluid from the valve assembly by blowing it out with air. Wipe the exterior of the extinguisher dry. (If gauge replacement is necessary, refer to page 56.)

10. Reinstall the hose and nozzle/wand assembly.

11. Reinstall the pull pin (the ring should face the front of the extinguisher). Install a new tamper seal. Record the recharge date and attach a new recharge tag to the extinguisher.

12. Weigh the assembled extinguisher and confirm that the total weight is within the allowable tolerances indicated on the Maintenance section on the extinguisher nameplate (label).

13. Return the extinguisher to its designated location.

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SECTION VIII – WATER EXTINGUISHERS – 133701

Buckeye Fire Equipment 2-1/2 gallon Water and Water Mist fire extinguishers are designed to combat Class A fires (common combustibles – wood, paper, trash). Both the Water and Water Mist extinguishers provide a clean, environmentally friendly, inexpensive, and readily available extinguishing agent whose extinguishing properties are universally understood. Water is the extinguishing agent of choice for novice and professional firefighters alike. The extinguishers are constructed of attractive and easy to maintain stainless steel and are equipped with discharge hose assemblies that allow the user to maintain a safe distance from the fire while accurately applying the agent.

MAINTENANCE PROCEDURES

DEFINITION: *Maintenance* is the thorough examination of the extinguisher and is intended to provide maximum assurance that it will operate effectively and safely when needed. This examination will determine if hydrostatic testing is necessary and if the repair/replacement of serviceable items or recharge is in order. If necessary, follow the applicable Buckeye service/recharge procedures contained in this Section.

FREQUENCY: Maintenance of extinguishers NFPA-10 shall be performed at least annually or whenever an inspection discrepancy dictates.

NOTES: Per NFPA-10, extinguishers taken out of service for maintenance shall be replaced by spare extinguishers of the same type and of at least equal rating.

Trained personnel using the proper tools, lubricants, and manufacturer recommended replacement parts should perform maintenance. They should be able to identify any indications of extinguisher damage or defect and be able to safely correct such conditions per the applicable service/recharge instructions.

MAINTENANCE – SERVICE PROCEDURES

1. Clean the extinguisher to remove dirt, grease, or foreign material. Check to make sure that the instruction nameplate is securely fastened and legible. Inspect the cylinder for corrosion, abrasion, dents, or weld damage. If any of these conditions are found and you doubt the integrity of the cylinder, hydrostatically test the unit using the proof pressure method and a suitable cage, in accordance with CGA Pamphlet C-1 and NFPA Pamphlet 10.

   NOTE: When cleaning the extinguisher avoid the use of solvents around the pressure gauge. Solvents can seriously damage the plastic gauge face.

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2. Inspect the extinguisher for damaged, missing, or substitute parts. Only factory replacement parts are approved for use on Buckeye extinguishers.

3. Weigh the extinguisher and compare the weight with the required weight printed in the Maintenance Section of the nameplate (label). Recharge the extinguisher if the weight is not within the indicated allowable tolerance.

4. Check the date of manufacture on the extinguisher nameplate. The cylinder is required to be hydrostatically tested every 5 years to the test pressure printed on the nameplate. Buckeye Fire Equipment recommends that the extinguishing agent be replaced with a new Buckeye charge at the time of hydrotesting. Refer to the hydrostatic testing requirements on page 7.

5. Visually inspect the pressure gauge:
   a) If it is bent, damaged, or improperly installed – depressurize the extinguisher and replace the gauge.
   b) If the pressure is low – check for leaks.
   c) If overpressurized (overcharged) – invert the extinguisher and reduce the pressure to 50 PSI by depressing the operating lever. Quickly repressurize the unit to 100 PSI to avoid liquid clogging the valve. Check for leaks.

6. Check the pull pin for freedom of movement by breaking the tamper seal and removing the pin. Replace the pull pin if it is bent or difficult to remove.

7. Inspect the operating lever for dirt or corrosion that could impair its freedom of movement. Inspect the carrying handle for proper installation. If the lever, handle, or rivets are damaged or distorted, replace with the authorized Buckeye replacement part(s).

8. Remove the hose/wand discharge assembly and inspect each part for damage (including the discharge assembly o-ring). Replace as necessary. Blow air through the assembly to ensure that the passage is clear of obstructions and foreign materials.

9. Examine the pressurizing valve (Schrader Valve) for damage. The cap should be in place or pressure leakage will occur. Inspect the valve assembly for corrosion and damage. Pay particular attention to the thread connection for the discharge assembly. Replace the valve assembly or component parts as necessary. Be sure to follow the proper depressurization and recharge procedures.

10. Reinstall the hose/wand assembly.

11. Reinstall the pull pin and install a new tamper seal.

12. Record the service data on the extinguisher inspection tag and return the extinguisher to its designated location. Make sure the extinguisher is oriented so that the nameplate is facing outward.

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13. Verify that the securing/mounting hardware is in proper working order and is the proper hardware for the extinguisher.

RECHARGE

Recharging NFPA-10 4 is the replacement of the extinguishing agent, including the expellant for this type of extinguisher.

WARNING/SAFETY POINT:

a) ***Before attempting to recharge an extinguisher be sure it is completely depressurized.***

b) ***Use a regulated pressurizing source (nitrogen). Set the regulator to no more than 25 psi higher than the gauge operating pressure.***

c) ***Check and calibrate the regulator gauge at frequent intervals. The regulator gauge should be used to determine when the intended charging pressure has been reached. Do Not use the extinguisher gauge for this purpose.***

d) ***Never leave an extinguisher connected to a regulator of a high-pressure source for any extended period. A defective regulator could cause the cylinder to rupture because of excessive pressure.***

RECHARGING PROCEDURES

1. Complete the "MAINTENANCE-SERVICE PROCEDURE", Items 1 thru 10.

2. Discharge all remaining pressure and water. Be certain that there is no remaining air pressure.

3. Remove the valve assembly and disassemble it by removing the siphon tube assembly (using a wrench on the brass retainer - Do not wrench on the plastic), spring, and valve stem. Remove the collar o-ring from the valve assembly.

4. Thoroughly rinse all parts with clean water and wipe dry with a soft cloth. Blow the valve out with air or nitrogen. Inspect the collar o-ring, valve stem, and spring. Replace any parts that show signs of wear or damage. Lightly lubricate the collar o-ring and the small o-ring on the valve stem with Visilox V-728 (DO NOT lubricate the valve stem seal). Inspect the siphon tube for cracks or deformations. Replace with an authorized replacement tube as necessary. Inspect the siphon tube o-ring, replace if necessary.

5. Rinse the cylinder with clean water and inspect the interior of the cylinder per the CGA visual inspection standard, Pamphlet C-6.

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6. Fill the extinguisher with 2-1/2 gallons of water (deionized water is used for the Water Mist extinguisher).

7. Reinstall the valve assembly on the cylinder making certain to properly align the gauge face with the nameplate.

CAUTION: Hand-tighten the valve collar nut (100 – 125 in. lbs. max). Overtightening with a wrench will damage the valve.

8. Remove the cap from the air pressurizing valve on the side of the valve body and pressurize with 100 psi of nitrogen. The pressure regulator should be set a no more than 125 psi. Replace the pressure valve cap when pressurizing is complete. The cap must be in place to assure that the valve will not leak.

9. Check the collar, gauge, air pressurizing valve, cylinder welds, and valve for leaks. Use a leak detection fluid or a solution of soapy water. Remove leak detection fluid from the valve assembly by blowing it out with air. Wipe the exterior of the extinguisher dry. If gauge replacement is necessary, refer to the service illustrations and diagrams in Section IX.

10. Reinstall the hose/wand assembly.

11. Reinstall the pull pin (ring end positioned on the gauge side). Install a new tamper seal. Record the recharge date and attach the recharge tag.

12. Weigh the assembled extinguisher and verify that it is within the weight tolerance printed in the Maintenance Section of the nameplate.

13. Return the extinguisher to its designated location.

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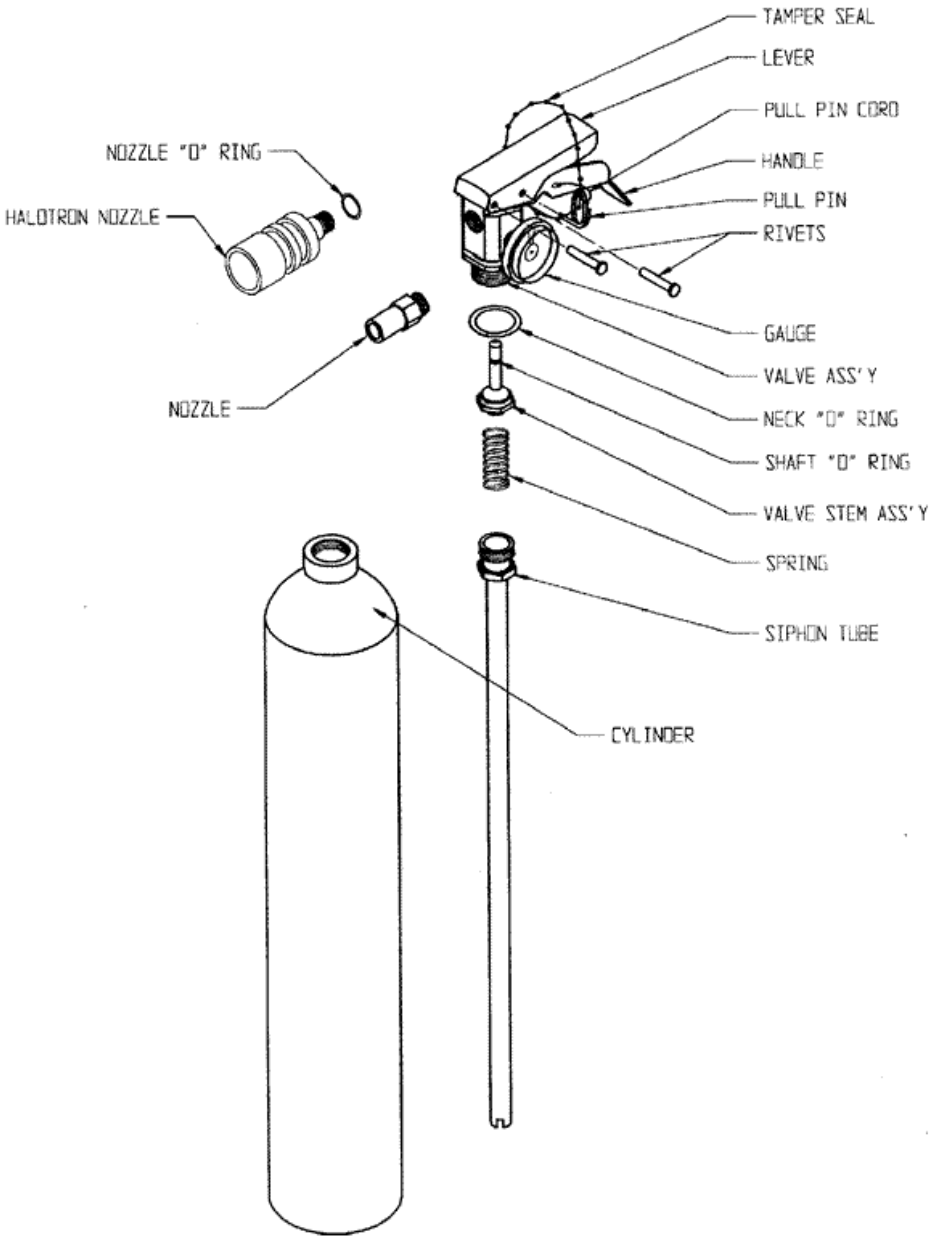
SECTION IX – SUPPORT MATERIALS

DRY CHEMICAL, HALON 1211 & HALOTRON I
ALUMINUM CYLINDER
SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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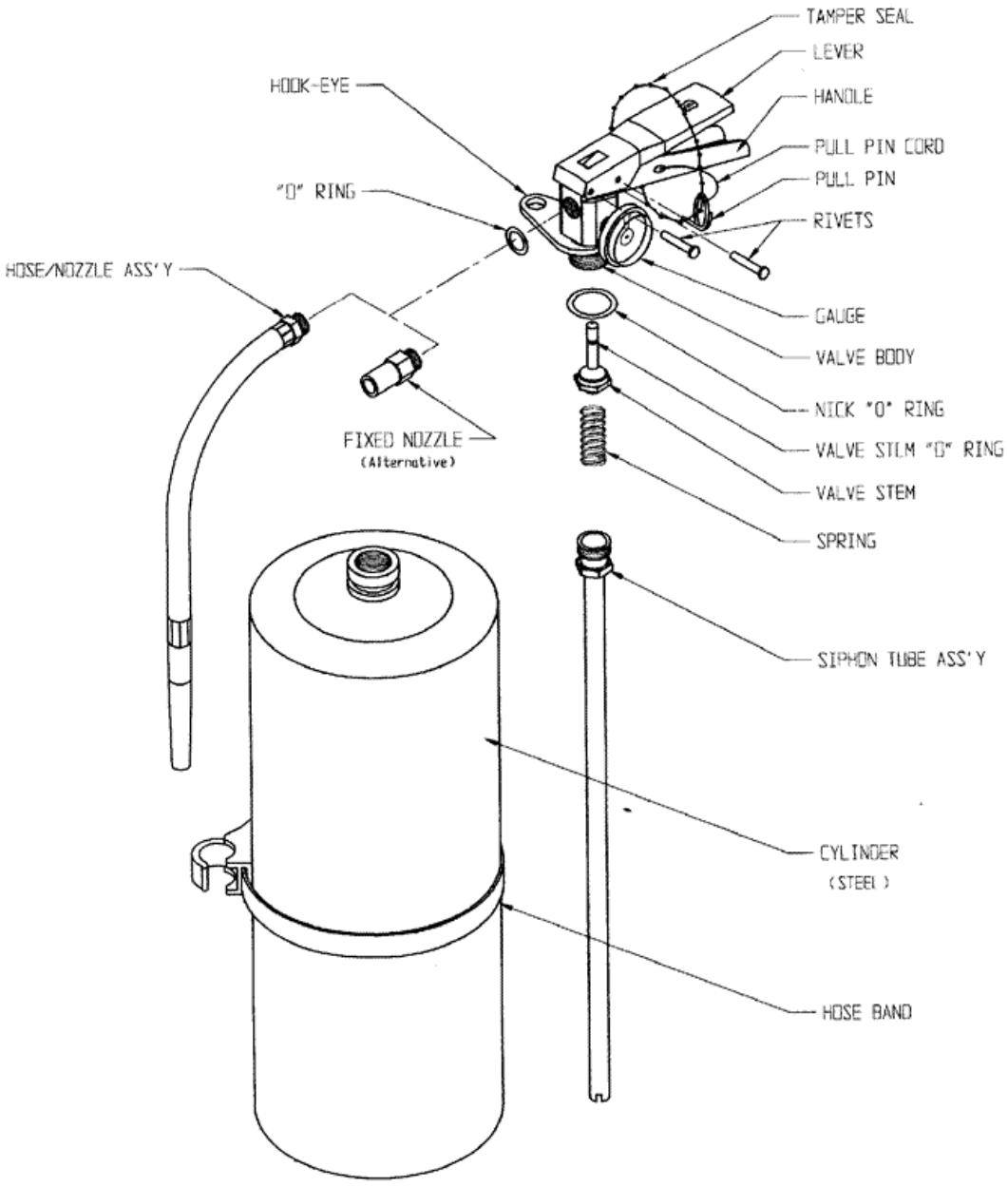
SECTION IX – SUPPORT MATERIALS

DRY CHEMICAL, HALON 1211 & HALOTRON I
STEEL CYLINDER
SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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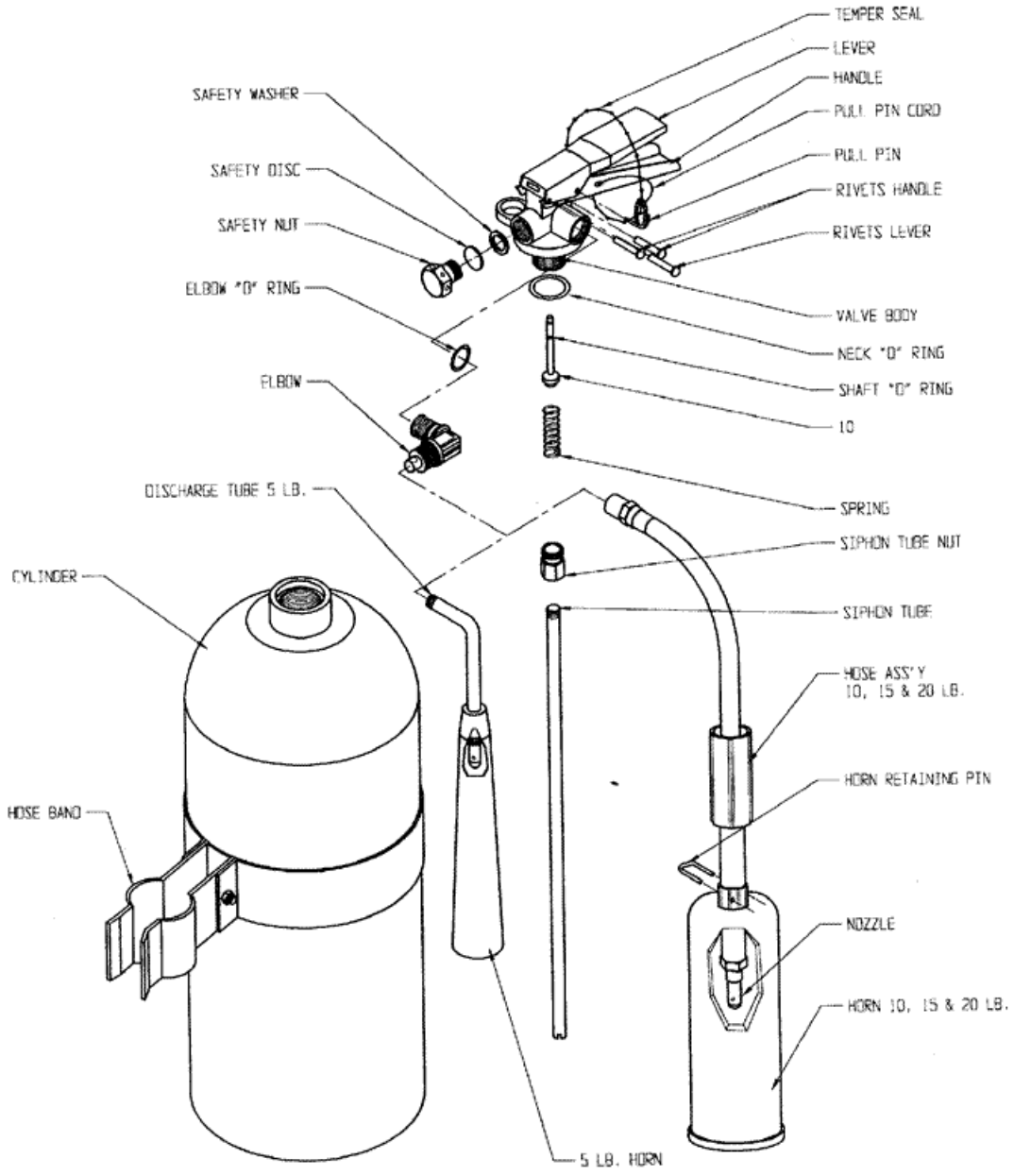
SECTION IX – SUPPORT MATERIAL

CARBON DIOXIDE FIRE EXTINGUISHER
5, 10, 15 AND 20 LB. CARBON DIOXIDE EXTINGUISHERS
SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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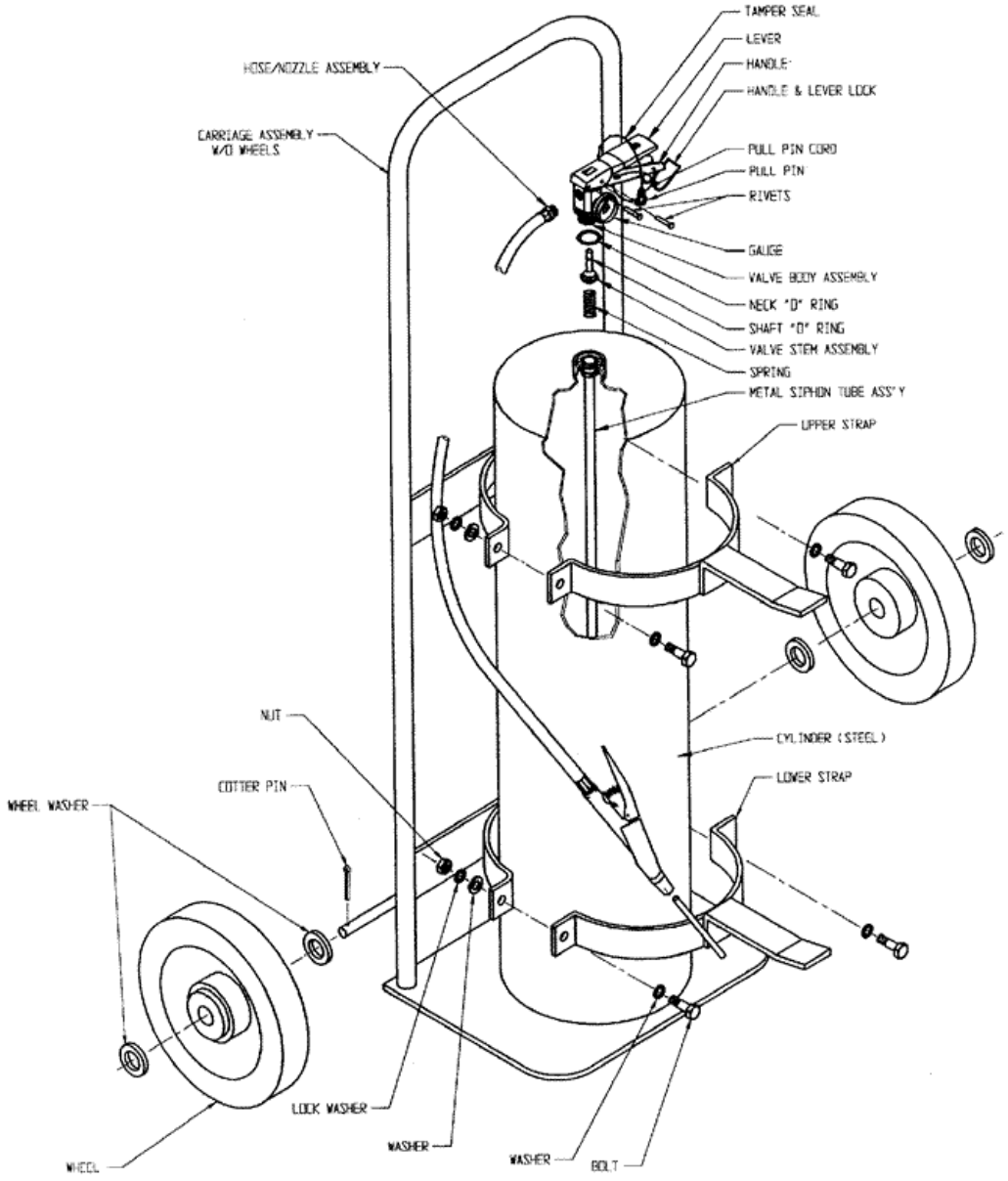
SECTION IX – SUPPORT MATERIAL

30 LB. PRESSURIZED DRY CHEMICAL WHEELED UNIT SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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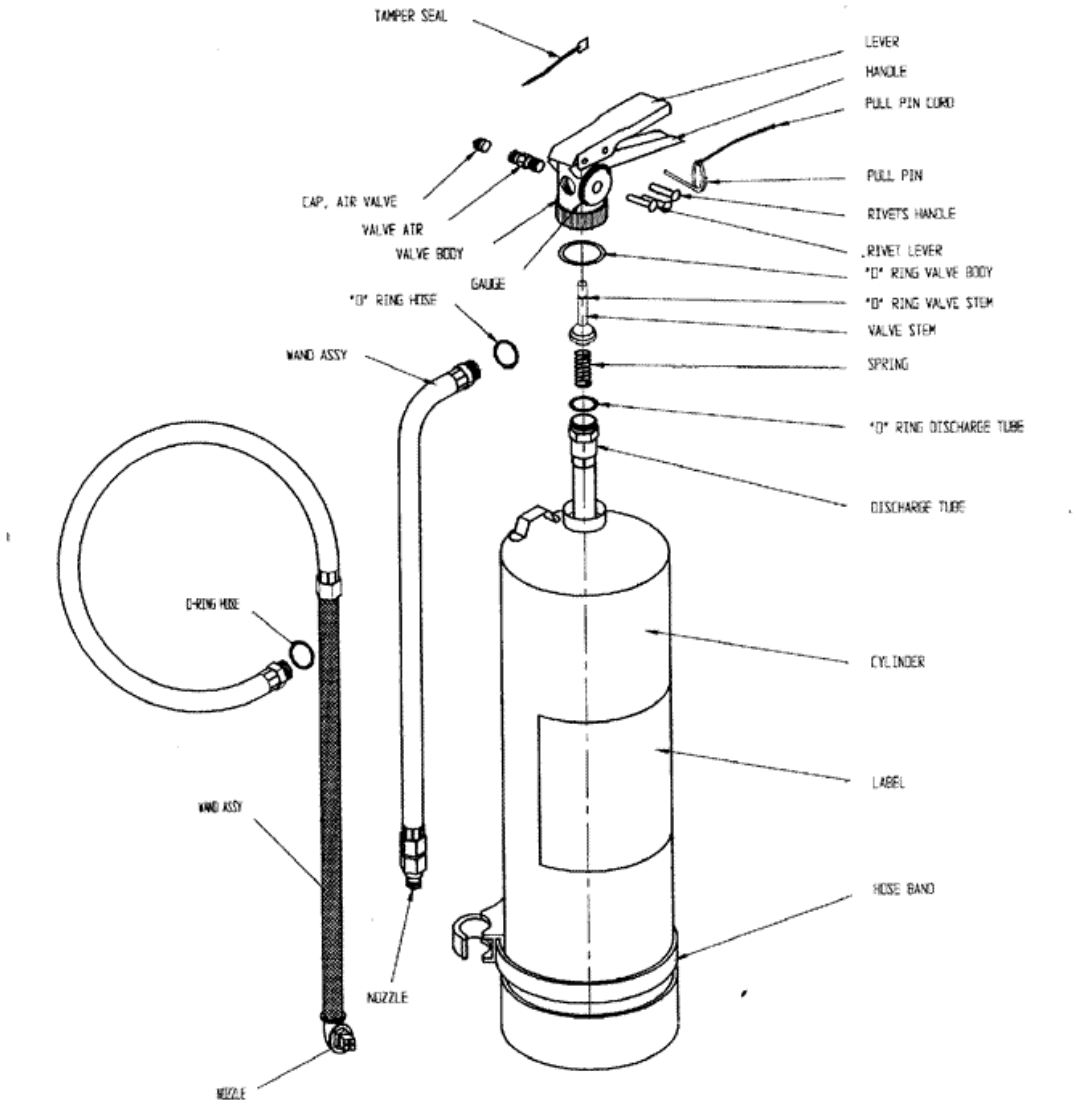
SECTION IX – SUPPORT MATERIALS

6 LITER & 2 ½ GALLON WET CHEMICAL STAINLESS STEEL FIRE EXTINGUISHER SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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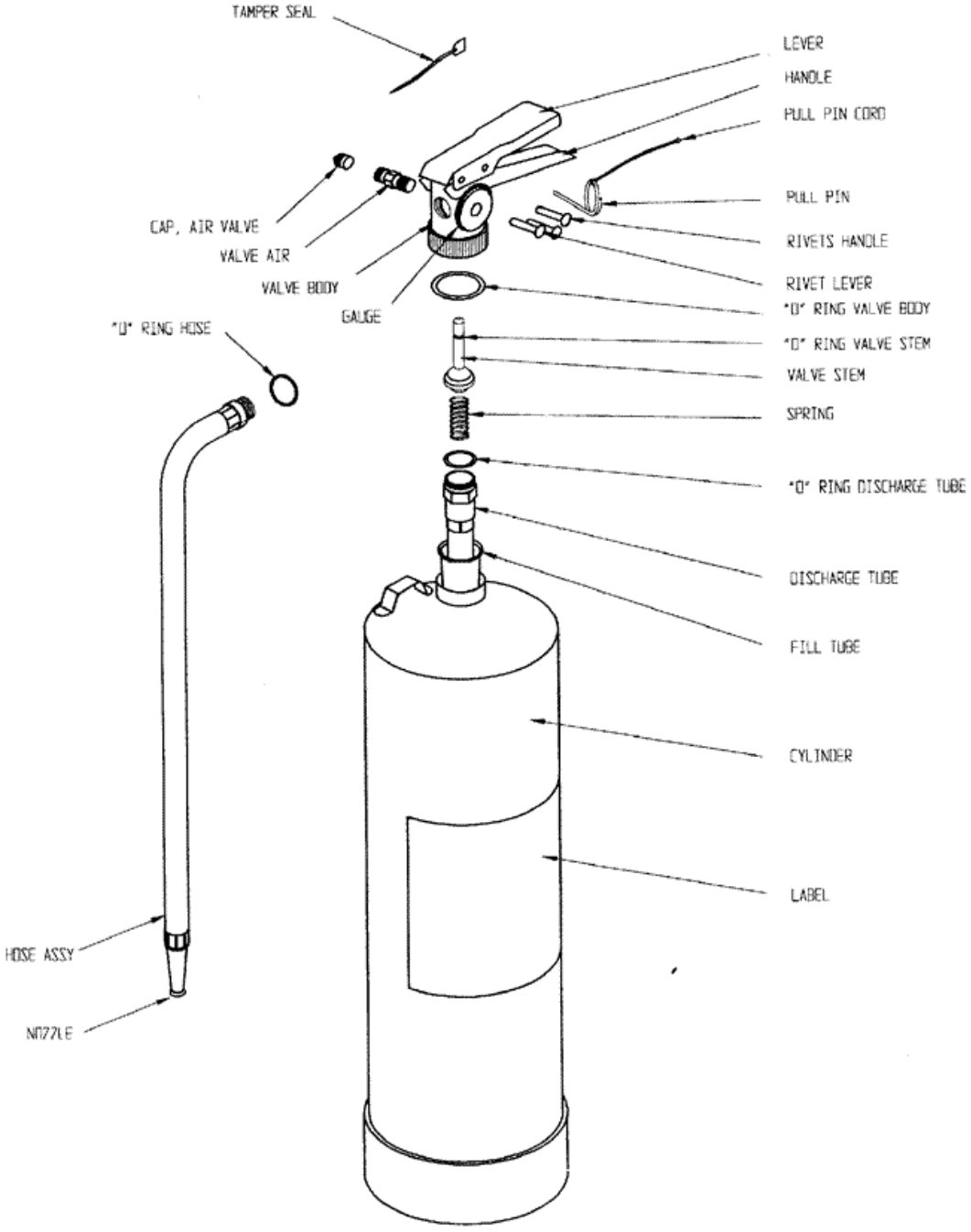
SECTION IX – SUPPORT MATERIALS

6 LITER WET CHEMICAL FIRE EXTINGUISHER SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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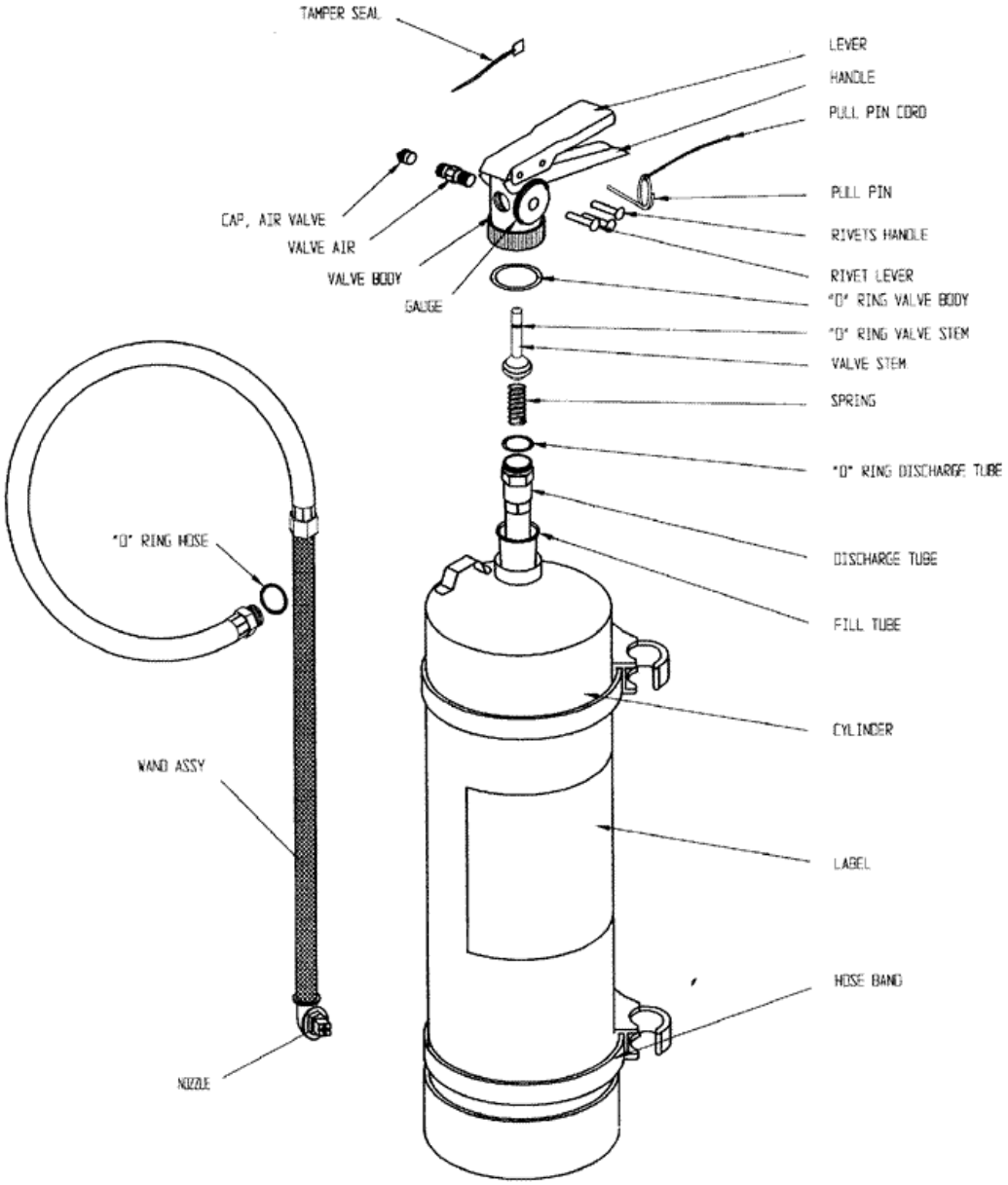
SECTION IX – SUPPORT MATERIALS

2 ½ GALLON WATER MIST FIRE EXTINGUISHER SCHEMATIC

(See Parts Price Sheet for Part Numbers and Prices)



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SECTION IX – SUPPORT MATERIALS

SERVICE ILLUSTRATIONS AND DIAGRAMS

RING PIN AND INSPECTIONS
SEAL INSTALLATION:

Installation of the pull pin should be from the nameplate/gauge side and be directed through the operating lever and extinguisher valve port. The inspection seal should be installed through the pull pin loop and around the operating lever, then pulled tight.

LEAK CHECK AREAS:

Dry Chemical, Halon, Halotron I and Wet Chemical models….gauge threads, gauge face, valve stem/outlet port and cylinder neck weld.

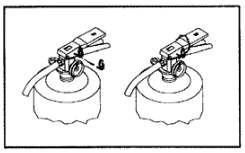
Carbon Dioxide models…safety relief, diffuser, outlet ports, and cylinder neck. "All units should be properly dried after leak check is performed."

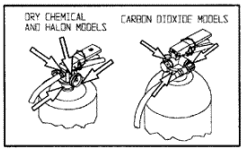
GAUGE REPLACEMENT:

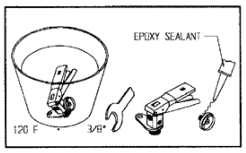
Remove valve per service/recharge instructions. Immerse valve body into hot water (120° F) to loosen sealant. Remove gauge with open end 3/8" wrench. Dry, clean and remove all old sealant from valve. Lightly apply Armstrong C4/W Epoxy to threads of new gauge and install with wrench until firmly in place. Ensure the gauge face orientation is correct. 3/8" wrench. Dry, clean and remove all old sealant from valve. Lightly apply Armstrong C4/W Epoxy to threads of new gauge and install with wrench until firmly in place. Ensure the gauge face orientation is correct. 3/8" wrench. Dry, clean and remove all old sealant from valve. Lightly apply Armstrong C4/W Epoxy to threads of new gauge and install with wrench until firmly in place. Ensure the gauge face orientation is correct.

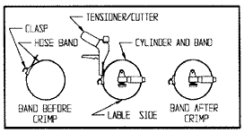
HOSE BAND INSTALLATION:

Install the hose band assembly onto the left side of the extinguisher so that the open end of the clasp is facing outward with the nameplate instruction label. Ensure band does not cover nameplate instructions, then firmly pull band tight with hand tensioner/cutter tool.









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MAIN OFFICE

110 Kings Road
Kings Mountain, North Carolina 28086-0428
Phone 704.739.7415
Fax 704.739.7418

SALES / WAREHOUSE LOCATIONS

ILLINOIS
65 East Palantine Road
Suite 211
Prospect Hts., IL 60070
800.528.3173
847.541.3886
Fax: 847.541.3879

DALLAS, TX
1170 Corporate Drive
Suite 201
Arlington, TX 76006
817.633.3626
877.391.3626
Fax: 817.633.5884

FLORIDA
3146 John P. Curci Drive
Bldg. 3A/Bay 4
Pembrook Park, FL 33009
954.966.9859
Fax: 954.966.8351

NEW JERSEY
24 Worlds Fair Drive
Suite E
Somerset, NJ 08873
732.560.8149
Fax: 732.560.3591

HOUSTON, TX
6226 Brookhill Drive
Houston, TX 77087
800.752.1274
713.645.3388
Fax: 713.645.3387

GARY NARKS
Olde River Yacht Club
4900 Whiskey Island
Cleveland, OH 44102
888.344.1103
Fax: 216.281.4204

JON DUNHAM
4072 S.W. Normady
Lee's Summitt, MO 64082
816.537.6482
Fax: 816.537.6483

TIM POTTS
PMB 302
1720 Mars Hill Road #8
Acworth, GA 30101
770.499-1538
Fax: 770.499.0477

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